12-1-1967

Special Libraries, December 1967

Special Libraries Association

special libraries

December 1967, vol. 58, no. 10

Library Statistics

Welcome to SLA Headquarters

SPECIAL LIBRARIES is published by Special Libraries Association, monthly September to April, bimonthly May to August, at 73 Main Street, Brattleboro, Vermont 05301. Editorial Offices: 235 Park Avenue South, New York, New York 10003. Second class postage paid at Brattleboro, Vermont.

POSTMASTER: Send Form 3579 to Special Libraries Association, 235 Park Avenue South, New York, N. Y. 10003

Contents — Volume 1, Number 1

Redundancy Test for Intermediate Signals in Asynchronous Logical Automata
E. A. Yakubaitis

Generalized Inverse Automata
A. A. Kurmit

A Noise Elimination Method for Single-Cycle Logical Circuits
V. V. Onzul

Accumulation During Random Search in the Presence of Noise
L. A. Rastrigin

Dynamic Coordinatewise Training During Statistical Optimization in the Presence of Noise
K. K. Ripa

Dual Extremal Control in Training Experiments
B. A. Besedin and V. P. Lis'ev

The Reliability Function of Finite Automata
A. N. Sklyarevich

Evaluation of Criteria for Selection of Optimal Characteristics for Monitoring
L. P. Leont'ev

Optimal Stockpiling with Nonmultiplicative Goal Functions
I. A. Ushakov

Periodic Incomplete Control of a Single Device
M. I. Yadrenko

Control of Non-Steady-State Processes of Mobile Objects
V. I. Petrov

Statistical Processing of Signals in Cross-Inhibitory Networks
A. A. Petrov, B. I. Petrov, and Yu. M. Petrov

A Probabalistic Automaton Model of Delivery from Unequal Suppliers
I. I. Kostina

Optimal Processing in Massive Computer Computations
V. M. Venevtsev, I. B. Gertsbakh, and M. S. Maksim

Capacitive Parasitic Coupling in Logical Circuits Using Tunnel Diodes
V. V. Yakovlev

Limiting Delays of Transistorized Delay Relays
D. K. Zibin

special libraries

OFFICIAL JOURNAL
SPECIAL LIBRARIES ASSOCIATION

DECEMBER 1967
VOLUME 58, NUMBER 10

Cost Characteristics of Library Service	686	Masse Bloomfield
The Validity of Comparative Technical Library Statistics	692	Margaret N. Sloane
Improving the Validity of Comparative Technical Library Statistics	697	J. W. Anderson
The Place of Standards in the New Technology of Information Science	703	Jerrold Orne
The Association of Jewish Libraries	707	Joseph Yenish
Information Department in the Center for Library Science and Methodology, Budapest	710	Ingetraut Dahlberg
Naval Research Laboratory Library Celebrates Forty Years of Service	718	LaVera A. Morgan
Second IATUL Seminar Held in Delft	720	Margit Kraft

Special Libraries Association

Proposed Increase in Dues	685	Elizabeth R. Usher
Welcome to SLA	713	

Features

Have You Heard	724
Off the Press	728

Papers published in SPECIAL LIBRARIES express the views of the authors and do not represent the opinion or the policy of the editorial staff or the publisher. Manuscripts submitted for publication must be typed double space on only one side of paper and mailed to the editor. ● Authors may order reprints immediately before or after publication. ● Subscriptions: U. S. $20.00; foreign, $21.50; single copies, $2. ● Annual author-title-subject index published with December issue. © 1967 by Special Libraries Association.

INDEXED *in Business Periodicals Index, Documentation Abstracts, Historical Abstracts, Hospital Literature Index, Library Literature, Library Science Abstracts, Management Index and Public Affairs Information Service.*

SPECIAL LIBRARIES ASSOCIATION

President

MRS. ELIZABETH R. USHER — Art Reference Library, Metropolitan Museum of Art
Fifth Avenue and 82nd Street, New York 10028

President-Elect

HERBERT S. WHITE — Documentation, Inc., NASA Facility
P. O. Box 33, College Park, Maryland 20740

Advisory Council Chairman

CHARLES H. STEVENS — Project Intrex, Massachusetts Institute of Technology
77 Massachusetts Avenue, Cambridge, Mass. 02139

Advisory Council Chairman-Elect

MRS. CHARLOTTE S. MITCHELL — Library, Miles Laboratories, Inc.
Elkhart, Indiana 46514

Treasurer

JEAN DEUSS — Research Library, Federal Reserve Bank of New York
Federal Reserve P. O. Station, New York 10045

Past-President

DR. F. E. MCKENNA — 148 West 10th Street
New York 10014

Directors

MRS. THEODORA A. ANDREWS, *Secretary* — Pharmacy Library, Purdue University
Lafayette, Indiana 47907

MRS. GLORIA M. EVANS — Production and Engineering Library
Parke, Davis & Company, Detroit, Michigan 48232

CHARLOTTE GEORGI — Graduate School of Business Administration Library
University of California, Los Angeles, Calif. 90024

EFREN W. GONZALEZ — Scientific Division, Bristol-Myers Products
225 Long Avenue, Hillside, New Jersey 07207

PHOEBE F. HAYES — Bibliographical Center for Research
1357 Broadway, Denver, Colorado 80203

RUTH NIELANDER — Kemper Insurance
4750 North Sheridan Road, Chicago, Illinois 60640

Executive Director

GEORGE H. GINADER — Special Libraries Association
235 Park Avenue South, New York 10003

Membership

Dues: Sustaining: $100; Active: $20; Active Paid for Life: $250; Associate: $20; Affiliate: $15; Student: $2; Emeritus: $5. For qualifications, privileges, and further information, write Special Libraries Association.

SLA Translations Center

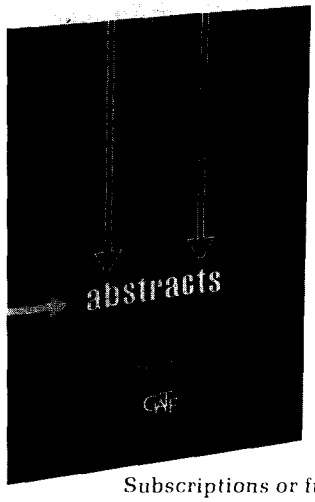
John Crerar Library, 35 West 33rd Street, Chicago, Illinois 60616

Annual Conference

The 59th Annual Conference will he held at the Statler-Hilton Hotel, Los Angeles, California, June 2-7, 1968.

Graphic Arts Abstracts

a monthly publication of the Graphic Arts Technical Foundation



GATF's Graphic Arts Abstracts is the only international abstracts service published in the United States for the graphic communications industries. Its coverage includes printing processes, color reproduction, typography, quality control, education, binding, pollution control, management and patents. It covers paper, ink, photography, packaging and advertising as these areas relate to printing processes. Periodicals abstracted include the leading English language publications and representative journals in German, French, Spanish and Italian. Periodicals from the Scandinavian countries containing English versions are also reviewed. Photocopy and bibliography services are available.

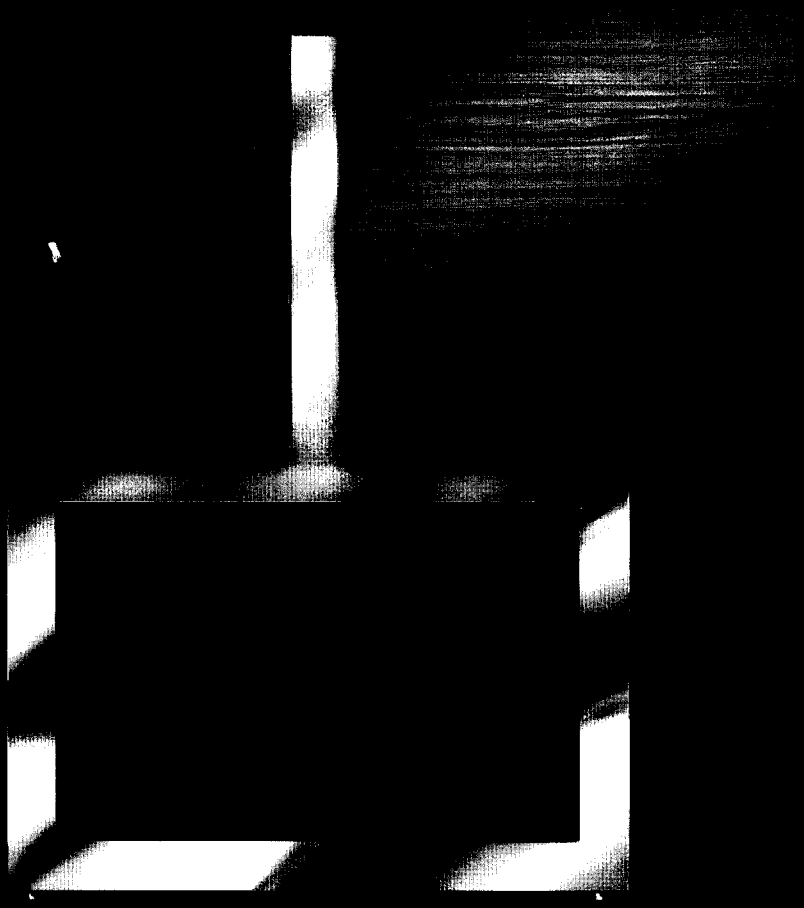
Annual Subscription Rate: $20.00

Subscriptions or further information can be received from:
E. H. Wadewitz Library

Graphic Arts Technical Foundation
4615 Forbes Avenue, Pittsburgh, Pennsylvania 15213

Introducing

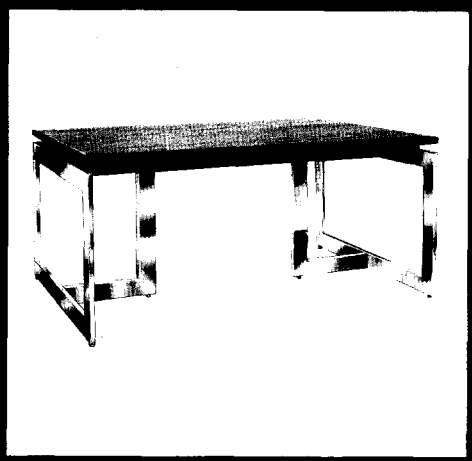
TEKTONIC™ 200

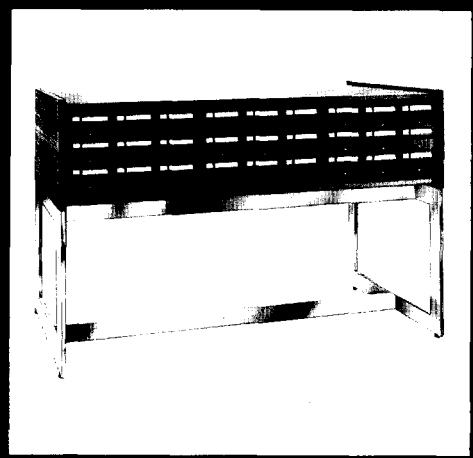


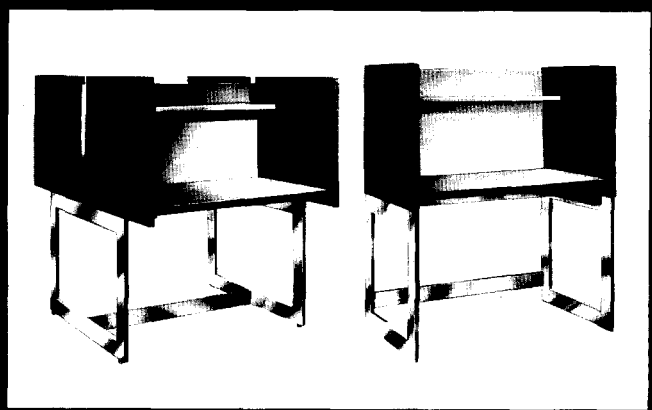
New, exciting concept in library furniture with you the ultimate designer

TEKTONIC™ 200

DESIGN—Tectonic . . . structural, architectural in feeling. Classic proportions, simple linear geometry, meticulous detail. **CONSTRUCTION**—Sturdy. In wood, metal, fabric, laminated plastic. Modular, interchangeable carrel panels. Complete flexibility in the use of space. **HUMAN ENGINEERING**—Work habits researched in depth for student needs, involvement, acceptance. **COLOR COORDINATION**—Wide selection of colors, materials, finishes . . . uniquely expressing your design creativity. Planning a contemporary library? Contact us for further information and assistance.







LIBRARY BUREAU REMINGTON RAND OFFICE SYSTEMS DIVISION · 801 PARK AVENUE, HERKIMER, NEW YORK

SPERRY RAND

special libraries

Proposed Increase in Dues

OUR SPECIAL LIBRARIES ASSOCIATION must make a number of adjustments which have direct effect on our financial picture. In September our Headquarters moved to a new, improved, attractive location. While we feel that this change is to the best interest of the Association, we must face the fact that the increase in rental is considerable.

Important, too, among the innovations from which we are deriving benefits and for which we must pay are a retirement program, hospitalization, and major medical coverage for our Headquarters staff. In addition, we can well be proud of our new Pay Plan for the staff. The salary ranges now make it possible for SLA to attract experienced and well-qualified personnel who will be able to give to the membership the improved service which is their just due.

In May your Board of Directors voted to accept the recommendation of the Finance Committee to increase the dues for the Special Libraries Association to $30.00 per year for Active, Associate, and Affiliate members, and to $500.00 for Life Memberships and $5.00 for Student members, to be effective in January 1969. On May 29 the Advisory Council passed the resolution to support this Board action by requesting favorable membership action from the Divisions and Chapters at the Los Angeles Conference.

Several SLA officers and Committee Chairmen will, in the next few months, write informative articles on the need for a dues increase. Your President hopes that all members will read these articles carefully and will not hesitate to ask any questions. It is only with the cooperation of the entire membership that the Special Libraries Association can continue to be the strong professional organization for all special librarians and information specialists.

MRS. ELIZABETH R. USHER
President

A survey was taken during 1966 of nine aerospace libraries gathering data on four characteristics of their operation. These four characteristics are: *1)* circulation; *2)* library staff; *3)* patrons served; and *4)* library space. The total operating costs of each aerospace library were estimated by using a fixed dollar amount spent per library staff member. Ratios were then taken of the five variables. The most important ratio is that of the cost per circulated item. For aerospace libraries, this figure averages about $5.00 per circulated item. Comparing the same techniques for several public libraries, it was found that public libraries spend about $0.62 to circulate one book.

Cost Characteristics of Library Service

MASSE BLOOMFIELD

A SURVEY WAS undertaken in the latter part of 1966 to compare four characteristics of aerospace libraries with Hughes Aircraft Company libraries. This survey has produced relationships of library activities which may be of value to other libraries. The study also was expanded to include selected data concerning public libraries.

A dollar value was determined for the cost of circulating one item in aerospace libraries and in public libraries. The literature on cost studies tends to show the cost of technical processes. In no previous study of aerospace or special libraries were dollar figures found which could be compared to those found in this study using circulation as a base.

Earlier Studies of Special Library Data

In previous studies of special libraries, such as Gibson[1] and Sharp[2] performed in the late nineteen-fifties, there are ratios which can be related to this survey of aerospace libraries. Also, the survey performed by Bedsole[3] provides additional data for comparison. However, none of these studies gives total dollar expenditures which can be related to other library activities.

Mr. Bloomfield is supervisor of the Culver City Library, Services Division, Hughes Aircraft Company, Culver City, California. *His paper was originally presented at the 58th Annual Convention of the Special Libraries Association, May 31, 1967, New York City, to the Joint Session of the Insurance, Metals/Materials, Petroleum, Science-Technology, and Transportation Divisions.*

The data from Gibson, Sharp, and Bedsole appear in Table 1. These three studies give figures for total library staff, for library patrons, and for total library square feet. Thus, using these figures, it is possible to determine the relationships of the number of patrons per library staff member, the library area per patron, and the library area per library staff member. These are the only relationships that can be found using the earlier data which can be related to the ones found in the present survey. Gibson and Sharp give only partial dollar costs. Because the three earlier studies do not contain either circulation data or total costs, they cannot be compared fully with the data obtained in this study. The one earlier study which comes closest to the figures generated by this study are those found by Bedsole[3] for libraries having a staff of over fifteen people. Bedsole studied special libraries by industry, including the aircraft and missile industry, but these data do not compare well with the data of this study. However, Bedsole's data, when analyzed by the size of the library, does compare somewhat with some of the ratios found in this study.

Survey of Aerospace Libraries

Nine aerospace libraries were surveyed for five characteristics. Four of these characteristics are: *1)* circulation; *2)* library staff; *3)* patrons served; and *4)* library space. The

Table 1. Data from Earlier Studies

	Gibson Averages	Sharp Averages	Bedsole Averages for Special Libraries Having Over Fifteen Persons on the Library Staff
Number on library staff	5	6.95	25.9
Number of square feet in library	2,601	2,511	6,537.3
Number of patrons	236	339.8	1,580.4
Number of patrons per library staff member	47.2	48.9	61.0
Library square feet per library staff member	520	361	252.4
Library square feet per patron	11	7.4	4.1

fifth characteristic is total dollar costs, which was estimaated by assuming each library staff member spent an average of $10,000 per year.

It is of some importance that the way in which the data for these characteristics were gathered be explained. First, the circulation statistics were requested in terms of books circulated, government reports circulated, and the number of reprints reproduced. By asking for circulation statistics in a three-part question to the libraries being surveyed, it was felt that the libraries would respond with figures that would be more consistent with the other libraries than if the total circulation figure was requested. The library staff members were identified as those people who report to the head librarian and perform library functions. It should be pointed out that services rendered by libraries vary from library to library. For example, some libraries provide translators on their staff and others do not. The library with a staff of two most certainly could not support a translator on its staff. Bedsole points this out very clearly in his appendix. The number of patrons served represents not only the salaried research and development personnel but also the salaried engineering personnel, the salaried management and the salaried administrative personnel. The reason for including these classes of salaried employees was to try to get as reliable a picture as possible of the number of potential library users within the aerospace industry. The library areas as defined in this paper include that space which the head librarian controls and again may or may not be entirely devoted to identical functions at each library surveyed.

Libraries of nine aerospace companies were surveyed. These libraries are all independent, although they may or may not have branches. For those having branches, the additional figures for people, space, circulation, and patrons were included in the total for the central library. Table 2 shows the various statistical aspects of aerospace library operation. The high, low, median, and average are given, which should identify the range and the central tendencies of the data. The data in Table 2 are presented much in the same fashion as was used by Gibson and Sharp in their studies. The relationships involving circulation are considered to be the most important of the data shown. The number of circulations per library staff member, the number of circulations per patron served, and the estimated cost per circulation all point to figures that have central tendencies and that can be used as indicative characteristics of aerospace libraries. The dollar figure shown is meant to include all operating expense, that is, book budgets, maintenance, salaries, lights, materials, and such. It should not include capital items such as the cost of the building or major purchases such as a full catalog range. The dollar figures shown in Table 2 had to be estimated. It was not ex-

pected nor was it requested that the aerospace libraries provide exact dollar amounts of their total expenditures. Budget information of this nature is normally company private in the aerospace industry. However, two figures for actual expenditures were available and they closely approximated the estimate of $10,000 a year per library employee. Because the aerospace libraries have large government report collections, the expenditures for aerospace libraries may only be valid for aerospace libraries, and may not be valid for those special libraries which do not have extensive report collections.

The most important figure shown in Table 2 is the estimated cost per circulated item. This figure, which comes from two other figures, which may not be too well standardized, does show a central tendency at the average cost of about $5.00 per circulated item.

All the figures shown in the mean column are given to show the greatest central tendency. This is to say that the four numbers for circulation, patrons served, library staff members and space are averages of the four prime characteristics and are not averages of the nine libraries. The difference, using either set of statistics, is minor. Thus, using this technique, the square feet per patron shown in the mean column is not the average of nine values, but is the average number of square feet of floor space (10,103) divided by the average number of patrons served (4,006). It is felt that, by using average numbers for the ratios, the ratios would more closely represent a better figure of central tendency. It should be noted that the median and mean are extremely close together for all the characteristics shown in Table 2.

Public Library Statistics

A comprehensive survey was taken by Dean Boaz[4] of the University of Southern California for public libraries in a four county area close by and including Los Angeles. Her survey shows that the cost per book circulated by the public libraries covered was about $0.55 in 1964. This is a factor of ten less than found for the aerospace libraries.

The figures given in table 3 are from the Boaz survey. The first column gives the totals for all the libraries in the survey. Six separate libraries in the survey are shown in the succeeding columns. These six libraries were

Table 2. Comparison of Selected Aerospace Libraries

	HIGH	LOW	MEDIAN	MEAN
Circulation per month	14,000	600	5,150	5,107
Patrons served	9,000	250	4,000	4,006
Library staff	49	2	34	31
Square feet of floor space	21,600	2,575	10,400	10,103
Square feet of floor space per patron	21.0	1.2	2.7	2.52
Square feet of floor space per library staff member	1,286	220	309	326
Patrons per library staff member	265	13	136	129
Monthly circulation per library staff member	300	89	151	165
Monthly circulation per patron served	11.37	0.45	1.45	1.28
Total monthly dollars (estimated at $10,000 per library staff member per year)	$40,833	$2,500	$28,333	$25,833
Estimated cost per circulation	$9.35	$2.92	$5.50	$5.06

chosen primarily to show the effect of size on the cost per book circulated. Thus, library 42, which had the lowest circulation of any of the six libraries (60,725), also had the lowest cost per circulated book ($0.40) of the six individual libraries analyzed. A medium-sized library with a yearly circulation of 513,534 books a year had the highest cost per circulated book ($0.69). The two large libraries shown in Table 3 were both very close to the average obtained for all the libraries surveyed. The data shown in Table 3 point to the fact that size does not seem to have any effect on the cost per circulated book in a public library. These figures do seem to indicate that there are greater possibilities for both efficiency and inefficiency to show up markedly in the smaller library systems, whereas, in the larger systems, the public library services seem so uniform that their costs per circulated book fall very close to the cost found for the average of all the libraries in the survey.

Unit cost per circulation has been used in conjunction with public libraries. Wheeler and Goldhor[5] in their book, *Practical Administration of Public Libraries,* mention the use of this ratio. However, these authors did not use this ratio as a standard to compare the activity of public libraries. Dean Boaz does not mention this ratio in her survey. Public libraries generally use per capita ratios to define their characteristics.

Costs per Professional/Technical Employee

In 1958, Knox[6] reported that about $500 a year was being spent by chemical companies in support of library services per professional/technical employee. When the cost figures assumed in this study were divided by the number of patrons served, these results averaged $160 per patron served. The high for this measure was $780 and the low was $38. The probable reason for the wide variation in the aerospace industry is that research personnel are difficult to define.

Discussion

The data shown in this article are at best indicative. The number of samples taken has been small for the data supporting the aerospace libraries. Despite the limitations of the sampling, the cost data do indicate a central tendency.

In a public library, circulation is by far a more important function than in a special library. One of the assumptions made for the aerospace libraries is that their circulation statistics are compiled in an identical manner. This is not true. For public libraries, book circulation is compiled statistically with more evenness than in aerospace libraries. The major reason for most public library collections is to have books taken out of the library and read. The special library's collection may take on the characteristics of a reference collection in many instances. However, the one basic measure which provides some common base for all public libraries and all special libraries is circulation. Circulation should be an index to the amount of use a library collection receives.

Once this assumption is accepted, then the statistics compiled by one library should have some relationship to every other library of a similar nature. The statistics for circulation can be related to the amount of money it takes to circulate one item. Thus, in the data collected by Dean Boaz, the average Southern California public library spent approximately $0.55 for each circulation in 1964-1965. The average aerospace library spent approximately $5.00 for each circulation in 1966. The other ratios that appear in this paper can be used for guidelines, but they are not nearly as indicative of the relative performance of a library as is the dollar amount for a circulated item. It is especially important that only similar libraries be compared to similar libraries. The aerospace library cannot be compared reasonably with the public library. The way the two are organized and their missions are so different that the cost per circulated item cannot be compared reasonably. The additional clerical routines needed to safeguard items classified for security reasons cannot but help add to the cost of the aerospace libraries.

In making any comparisons of the data found in this survey with that found by Gibson and Sharp, the greatest difference is found in the number of people on the library staffs. Gibson and Sharp found the average number of people on a library staff of a special library to be close to six. This survey has the average at thirty-one people, or about

Table 3. Cost per Circulated Book Using Data from a Public Library Survey

	Total for All Libraries Surveyed	Library 01	Library 16	Library 21	Library 38	Library 42	Library 58
Book circulation	45,658,749	477,936	14,017,708	513,534	75,156	60,725	9,980,396
Registered borrowers	2,627,838	n/a	n/a	n/a	n/a	n/a	n/a
Library staff	3,248	35.2	1,057.25	44	4	n/a	630.88
Monthly book circulation per library staff member	1,170	1,130	1,120	970	1,565	n/a	1,320
Monthly book circulation per registered borrower	1.45	n/a	n/a	n/a	n/a	n/a	n/a
Operating costs	$24,960,338	$269,312	$7,483,293	$354,410	$42,359	$24,388	$5,331,052
Cost per circulated book	$0.55	$0.56	$0.53	$0.69	$0.56	$0.40	$0.54
Cost per library staff member	$7,685	$7,650	$7,080	$8,054	$10,589	n/a	$8,450

n/a = Not available.

five times as many as Gibson and Sharp. Also, the number of patrons served is far greater in this study, by almost a factor of ten. Gibson and Sharp show the average number of patrons to be between 250 and 350, and in this study it is 5,000. The data from Bedsole for special libraries having over fifteen persons on the library staff, as shown on Table 1, approximates the data found for aerospace libraries. Bedsole also separated his data by aircraft and missile industry, but these figures were for libraries much smaller than the ones reported here. In the relationships that Bedsole developed, size does seem to have some determination on such relationships as patrons per library staff member and library area per library staff member.

The figure Knox found for financial support per patron is far greater than that found in this study. This may be due to the definition of which employees should be included as patrons. In the aerospace industries, it is extremely difficult to separate engineers from research scientists. Whereas, in the chemical industry, the production personnel are easily defined and differentiated from the research scientists. Knox surveyed the chemical industry where the research departments are separated easily from the engineering and production staffs. The figure Knox found in 1959 was $500. The figure found in this study was $160.

A word of caution should be added when using the figure shown in this study or any other study where dollar figures are given. These values must be related to the cost of living index so that equal dollars can be determined. Thus, the $500 that Knox found in 1959 should have grown considerably in the last seven years. If his values had really been comparable, extrapolation from some index of that year to this would have had to have been made.

The cost per circulation for public libraries has increased steadily along with the cost of living. The cost per item circulated has been calculated by Kaiser[7] as being $0.124 in 1900 and rising to $0.276 in 1946. Using data for all California libraries,[8] the figure for the cost per item circulated grew from $0.375 in 1953-54 to $0.62 in 1965-66. The figures from 1900 to 1966 follow generally the same pattern as does the cost of living. This indicates that this factor of library services has some stability.

Another figure which may have value is total costs per library staff member. For the aerospace industry, this cost was estimated at $10,000 per year. For public libraries, this cost averaged $7,685 in 1964-65 in the Boaz study. This figure may be useful when setting current budgets for libraries.

It is possible to use the cost per circulated item as a characteristic of classes of libraries. Because this study was restricted to nine aerospace libraries, the cost figures are given as indicative.

Yet, using these admittedly indicative figures, it is possible to conclude that, if an aerospace library is spending more than $5.00 per circulated item (or $0.62 for a public library), that library should conduct an analysis to see if its charges are indeed too high.

References

1. GIBSON, E. B. What Can Be Learned From a Library Survey? *Special Libraries,* 48, 133-138, 1957.
2. SHARP, H. S. A Survey of Electronics Libraries. *Special Libraries,* 49, 157-160, 1958.
3. BEDSOLE, D. T. Library Systems in Large Industrial Corporations. Ann Arbor, Mich., 1961 (University of Michigan PH.D. dissertation).
4. BOAZ, M. Strength Through Cooperation in Southern California Libraries: A Survey. Los Angeles, 1965.
5. WHEELER, J. L., and GOLDHOR, H. Practical Administration of Public Libraries. New York, Harper and Row, 1962, p. 415-6.
6. KNOX, W. T. et. al. Administration of Technical Information Groups. *Industrial and Engineering Chemistry,* 51, 48A-61A, 1959.
7. KAISER, W. K. Statistical Trends of Large Public Libraries, 1900-1946. *Library Quarterly,* 18, 275-281, 1948.
8. Data taken from various statistical issues of the *News Notes of California Libraries,* 54-62, 1959-1967.

The basic element which makes comparative library statistics non-valid is inherent in the services offered and the procedures which are followed to effect these services. Disagreement is expressed with Mr. Bloomfield's method of obtaining his statistics, as well as his analysis of them. The conclusion is drawn that perhaps comparative statistics are not the solution; rather, management should be educated to the fact that each library is unique and statistical comparison should not be attempted.

The Validity of Comparative Technical Library Statistics

MARGARET N. SLOANE

CONCERNING the validity of comparative technical library statistics, I should like to make my point in the following manner. Should someone ask me, "How is your library?", I would answer, "In comparison with what?"

In comparison with what? That is just about what it comes down to when we try to compare one library statistically with another. I say that the basic element which makes comparative statistics non-valid is inherent in the services offered and the procedures which are followed to effect these services.

I would say that in the survey made by Mr. Bloomfield, among all nine libraries there is only one factor they have in common in the circulation procedures: that is the factor that relates to the records kept of materials which leave the library.

I shall not spend time considering whether or not we need statistics, and why we need them, because if there are technical librarians who have never been called on for comparative statistics, I should like to know how they have avoided this particular exercise with management. I call it an "exercise." There is a two-drawer file cabinet in my office full of exercises labeled "What would happen if . . . ?"

"What would happen if we have to cut $10,000 out of the book budget?"

"What would happen if we have to cut the library staff by three people?"

"What would happen if we don't get the additional three thousand square feet of space for the library?"

As a matter of fact, I have collected such an excellent file of this kind of exercises over the years that my boss thinks I am a whizz—my response time is always better than his other managers. In most instances, my response time is dependent upon how long it takes my secretary to look through the file drawers, pick out the exercise which is applicable to the crisis in effect at the moment, and change the date to make it current.

Of course, if the exercise is several years old, it will involve changing some of the statistics—and this means retyping the whole thing; so my response time is a little longer. And then, too, I have learned a lot over the years in how to make statistics appeal to management.

Whereas five years ago I might have said "approximately two hundred items are circulated a day," I would never say that now; never cite round figures—they carry an aura of having been gathered off the top of your head. Today, I would say—quite positively—"We circulate 198.7 items daily."

Mrs. Sloane is presently Information Services Manager at the Ford Foundation, New York. At the time her article was written she was manager of TRW Systems Technical Information Center, Redondo Beach, California. Her paper was first presented at the Joint Session of the Insurance, Metals/Materials Petroleum, Science-Technology, and Transportation Division during the 58th SLA Convention, May 31, 1967.

And there is another important bit of lingo which is very impressive if you are talking to the budget people—especially the capital budget people. Never, never say, "The Microsystem Page Printer we need costs six thousand nine hundred and seventy dollars and forty three cents." Instead, just toss out, "Oh, the MPP we're going to purchase costs between six and seven K . . . a little under seven K."

These exercises I have done cover all areas of the information department. One of the most difficult is concerned with justifying additional information specialists or literature researcher specialists. Have you ever tried this one? About the only way we can do it is to equate the salary of one engineer or scientist against that of the information specialist or researcher. The salary equation includes, of course, the time it would take an engineer or scientist to do the work versus the time our trained information person would need to accomplish the same thing. This is a tough one, but the figures we come up with are perhaps the most valid of any of the figures connected with my exercises.

My point is: How much simpler it would be if we had valid comparative statistics at our fingertips. Not only could I throw away my collection of exercises, but I would be able to give my management a picture of what goes on in comparable libraries.

Mr. Bloomfield's survey is excellent. But I say his statistics are not valid—in a comparative sense. And why are they not?

First, I wonder why he picked the circulation function? In a discussion with him regarding his survey, he indicated that he felt that the standard cost per circulated item is useful as a measure of efficiency for a library —and of course I take exception to that statement also. Of the nine libraries surveyed, I am sure that the circulation function is the one function which has the least conformity in procedures.

And what does his cost of $5 per item prove? That we should not circulate materials? Or that our procedures result in inefficiency? I will show you later how a *drop* in circulation and an *increase* in circulation in our library were caused by factors which, in reality, reflected an *increase* in efficiency.

I disagree with the formula he used for obtaining his figure. Why be concerned with the whole library staff? And why be concerned with the entire space allocated to the library? And, for the life of me, neither I—nor our Industrial Engineers at TRW with whom I talked—can understand how the number of potential patrons should have any bearing on the cost of circulating an item.

After studying Mr. Bloomfield's paper, I arrived at a formula which gives me a much different figure for the cost of each item circulated.

I took the total of actual salaries of the eight people involved in circulation of all materials—books, periodicals, newspapers, technical documents (including secret documents). These eight people include the library group head in charge of the area. I added the standard RPE (Related Payroll Expense) percentage. I burdened the salary figures with space occupied by the circulation area, communication charges for that area, salary of chief librarian, my salary, my boss's salary, et al.—all the elements which go into a true burdened rate at TRW. I took this final figure and divided it by the number of items circulated for a month, and came up with a quite different figure—in the area of one dollar per item, as against Mr. Bloomfield's figure of five dollars. I must point out that I assume the method of burdening differs from company to company.

I must take strong exception to Mr. Bloomfield's statement that circulation should be an index to the amount of use a library collection receives. Also, he says that no matter how much money is being spent by a library, or whatever services it provides, circulation statistics are going to be the final criteria of its usefulness. This, he continues, is especially true of a public library. I cannot understand why he has seen fit to make a comparison with a public library. But, to repeat his view that "circulation statistics are going to be the final criteria of a library's usefulness." This might appear to be true, except for one thing—the reasons *behind* the fluctuation from month to month of statistics which reflect items circulated.

A case in point: In our library at TRW one might have noted at one specific month last year that in comparison with the previous month, the circulation of technical journals dropped by about 75 per cent—pardon me, no round figures—by exactly

74.5%. Consternation? Service bad? No one used the journals? Librarians unpleasant? Cause for alarm? By looking at the comparative statistics alone, I would say, "Yes . . . there is cause for alarm," except—why did the circulation figure of journals drop by this percentage? Because we began Xeroxing in-house copies of the articles requested instead of circulating the journals to our patrons and forcing them to Xerox the articles they wanted. It was as simple as that.

In another instance our circulation of secret documents increased markedly. Better service? Patrons more aware of our holdings? Librarians more pleasant? Not at all! Our security department ordered our patrons, who were pack rats and were building up their own libraries of secret documents, to destroy their copies and utilize the circulating copies in the library. And they did—and the reason for our increase in circulation figures of secret documents was as simple as that.

I have given these two examples to help lead you to the realization that what I said in the beginning holds true: the basic element which makes comparative statistics nonvalid is inherent in the services offered and the procedures which are followed to effect these services.

But if—and I say *if*—we do need comparative statistics which are valid, let us look at some of these procedures and pose some questions which would have to be answered and considered if we are to have valid comparative statistics.

Circulation

1. Of what is the collection composed? Books, journals, pamphlets, newspapers, engineering data such as specs/standards/drawings/T.O.s, et al.; suppliers' catalogs?
2. Do all items circulate? Or, are certain materials such as specs/standards distributed only? Do the reference materials circulate? If microfiche or microfilm is part of the collection, does this circulate?
3. Are the materials recalled on a rigid date-due basis? Or may the patron keep the materials, having them recalled only when needed by another patron?
4. What circulation files are kept and how are they arranged? By call number, date due, borrower's name?
5. Are the circulation records manually maintained or is an automated system used? If automated—how? Simple key punched cards or a more sophisticated system?
6. Are all circulating materials in open stacks? Or must the staff utilize materials in closed stacks in serving the patrons who come into the library?
7. Does the time spent in retrieving materials to fill requests enter into the statistics?
8. Are micrographic techniques utilized? reader-printers? printers? If so, does circulation maintain this collection and serve the patrons and act as the point responsible for the maintenance of the equipment?
9. Is in-house photocopying service available? If so, does circulation accomplish this reproduction?
10. Is interlibrary loan service used? Are photocopies of articles obtained from outside sources for journals not held in the Library?
11. Is reference service offered? Quick reference, or involved searches? Are the involved searches referred to a literature research group which is part of the information center, or does circulation arrange for an outside agency to accomplish the search?
12. If materials in circulation are needed by other patrons, does the circulation area recall it, or is the requester told to whom the materials are charged and that he may get it from the person to whom it is charged?

Acquisitions

1. Does the acquisitions department initiate, order, receive, and pay? Or does the company purchasing department order and pay—and the company receiving department receive—leaving only selection of materials and initiation of the orders to the library?
2. Does this department order all library materials for the company personnel as well as for the library?
3. Are the records automated? If so, to what extent?
4. What records are kept? On order—closed orders—and monies expended?
5. How much bibliographic checking is done before placing an order with a supplier?
6. Is classified material ordered? If so, this slows down the ordering and can affect the number of documents ordered in contrast to a library which shows large numbers of documents ordered, with no reference to the classification of the documents.

7. Is acquisitions responsible for establishing Field of Interest Registers (FOIR) with DDC, NASA, AEC, et al.?
8. What reporting is required by company accounting department of monies expended?
9. Does acquisitions route periodicals? How much processing is done on incoming periodicals?
10. Are journal subscriptions handled by a vendor who is responsible for automatic renewal, or does acquisitions have the responsibility for individual subscription renewals?

Cataloging

1. Are all materials classified, using standard classification tables? Or are accession numbers only used? Are journals shelved by title?
2. To what depth is classification carried? Cutter number, work mark?
3. If LC cards are ordered, is the LC classification number on the card used or does the cataloger adjust this to ensure compatibility with the existing collection?
4. What depth is used in the subject cataloging? What files are maintained for patron use?
5. If card catalog is maintained, in what form? Divided catalog? Are book catalog and documents catalog compatible in subject coverage?
6. How much processing is given unclassified documents received on automatic distribution through such channels as AEC, MIT, et al.?
7. How much processing is given unclassified documents obtained from DDC, NASA, et al.? Documents which can be reordered as required?
8. Is microfiche utilized? If so, what indexing is done to reflect these holdings and ensure their complete utilization?
9. Are hard copies maintained of those materials for which microfiche is also held? If so, are these hard copies cataloged?
10. What records are maintained in the catalog department? Shelf list, subject heading authority, main entry authority, thesaurus of descriptors?
11. What automation is in effect? Book catalogs printed? If so, in what form? By subject, by main entry, by call number?

Other Services

1. Does library include services of a literature research group? Or documentation services?
2. If so, what extra work load does this impose on acquisitions and cataloging? For example: If the research group offers selective dissemination of information, this will impose an added load on acquiring information in esoteric subject areas not required by general patron usage of the circulating library collection. Especially is this true in the area of certain foreign publications required by company marketing and long-range planning.
3. Are there satellite libraries and other off-site company division libraries for whom the central library is responsible for certain functions, such as the payment of invoices for materials which are purchased by the satellite libraries maintained by these divisions?

Conclusions

Now, I have stated that the non-validity of comparative statistics is inherent in the services offered and the procedures which are followed to effect these services.

I also said that we need valid comparative statistics if we are to be able to justify certain things as competitive in industry.

It is not difficult to obtain comparative and competitive salary information. We can get this from the Placement Service at SLA Headquarters. But even so, we do not know the intimate workings of the libraries or the companies which list these job openings and quote the salary ranges.

So, I am thinking that maybe what we need to utililize is a buzzphrase generator instead of statistics. We have three columns of words, with a number in front of each word (see next page).

Let us think of any three-digit number at random, then select the corresponding buzzword from each column. Put them together and you come up with something that sounds as though you know what you're talking about.

For instance, let us take 414—functional organizational parameter—pretty good! That sounds applicable to a budget reduction exercise. Now, how about something to back up a request for additional staff? Let us try 362—parallel transitional capability—perfect! Now, what about justification for your

annual forecast for growth? Books, documents, space, staff. Obviously you are going to need a 277 combined with a 556 for this one—systematized incremental projection, combined with responsive logistical time phase—you can't beat that!

The important thing is that the buzzphrase generator provides the user with the perfect aid for preparing material on any subject. Automatically you have a thousand different combinations that give your words and figures the proper ring of decisive, progressive, knowledgeable authority.

Our current crop of comparative technical library statistics are about in the same categories as these buzzphrases I've cited.

So, how do we get valid comparative statistics? Maybe we do not need them; maybe we are approaching this incorrectly. Since we seem to agree that our libraries are difficult to compare, maybe we should begin by educating our management to the fact that these comparative statistics they ask us to find are not a true picture, due to the lack of conformity of service and procedures.

Let us show them how we differ—how each library is unique and that comparison among them gives statistics which are no more meaningful than the output of the buzzphrase generator, and perhaps what is really needed is a 501 buzzphrase . . . a responsive managerial policy!

COLUMN 1	COLUMN 2	COLUMN 3
0. Integrated	0. Managerial	0. Options
1. Total	1. Organizational	1. Policy
2. Systematized	2. Monitored	2. Capability
3. Parallel	3. Reciprocal	3. Package
4. Functional	4. Digital	4. Parameter
5. Responsive	5. Logistical	5. Concept
6. Programmed	6. Transitional	6. Time-phase
7. Synchronized	7. Incremental	7. Projection
8. Compatible	8. Third-generation	8. Hardware
9. Balanced	9. Flexible	9. Dialogue

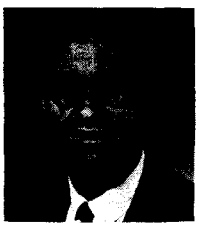
A comparison of published and unpublished statistics on staff, space, and costs of special libraries led to three graphs which relate staffs, space, and costs to number of potential patrons. These graphs, although they must be viewed as preliminary and tentative, suggest that it is possible to determine the optimal staff size, square footage, and per patron cost of a special library if the industry (or group-concern) served, the number of potential patrons, and the kinds of patrons are known. Further more detailed and systematic study utilizing the approach employed here is warranted.

Improving the Validity of Comparative Technical Library Statistics

J. W. ANDERSON

MOST SPECIAL LIBRARIANS have attempted at one time or another to find comparative statistics that would help them to plan or evaluate their libraries. Almost every special librarian faces the question: How large in staff, space, and materials should my library be? He faces this question when he establishes a library, annually if he has much to say about what his budget will be, and in an acute form when his organization has to cut back. It is not surprising that he would look around occasionally for some kind of standard against which to test his judgment, and which might assist him to communicate his needs to his management. And a lot of people have done a lot of looking around.

North American Aviation's S and ID Division Technical Information Center compiled some comparative data on a few major aerospace libraries in 1963. William H. Jones of Northrop surveyed aerospace special libraries in the Los Angeles area in late 1966. Roger DeTonnancour of General Dynamics in Fort Worth has been working on a survey recently. T. A. Rupprecht of Avco surveyed sixteen missile industry libraries in 1962. Dr. D. T. Bedsole completed an exhaustive doctoral dissertation comparing "Library Systems in Large Industrial Corporations" in 1961. The contributors to a symposium on the administration of technical information groups did a remarkable job of comparing chemical industry information centers in 1959. Harold Sharp published "A Survey of Electronics Libraries" in 1958, a year after Eleanor Gibson had published her survey of twenty-one "forward-looking" corporation libraries. And in March through June of 1966 SLA's own Professional Standards Committee published "profiles" of six different representative libraries. These are just a few of the attempts to identify good comparative statistics.



Mr. Anderson, Chairman of SLA's Science-Technology Division, is head of the Technical Library, Systems Development Corporation, Santa Monica, California. He presented this paper at the Joint Session of the Insurance, Metals/Materials, Petroleum, Science-Technology, and Transportation Divisions during the 1967 Annual Convention, May 31, in New York.

This searching certainly demonstrates a need for quantities to supplement qualitative standards. Comparative statistics lend a credibility to budget figures which even the most forceful librarian feels a need for occasionally, and no special library is so unique as to be incomparable in all aspects of its operation. The new comparative salary figures for special librarians resulting from the Association's 1967 Salary Survey will ease the task of countless special librarians in getting company salary schedules adjusted to fit the market and in estimating future personnel costs. The great variety of ways in which these salary figures are presented will make them useful to almost every special librarian and the

thoroughness of the study will make them credible to almost any management.

The salary area is only one of the areas in which comparative figures have been sought, but it is the area in which the greatest number seem to agree that standards can be established—this despite the greatly varying needs of individuals.

Most of the studies named explore the areas of staff and patron numbers, collection composition, and space; and attention is also given to variety of services, operating costs, and volume of activity. Some quantitative standards are suggested, such as that the ratio of professional to nonprofessional staff be 2 to 3 and that the percentage of the special library budget spent on personnel range from slightly below to slightly above 70 per cent. But that solid standards can really be found in any area outside of salaries is quite debatable, and the fact that the many searchings proclaims a need for quantities by no means certifies the reliability or applicability of the quantities found.

Three graphs will help to display and compare some of the statistics reported. There is a graph that shows size of library staff as a function of number of intended patrons, another which shows per patron cost of library service, and a third which shows space provided per patron.

Size of Library Staff

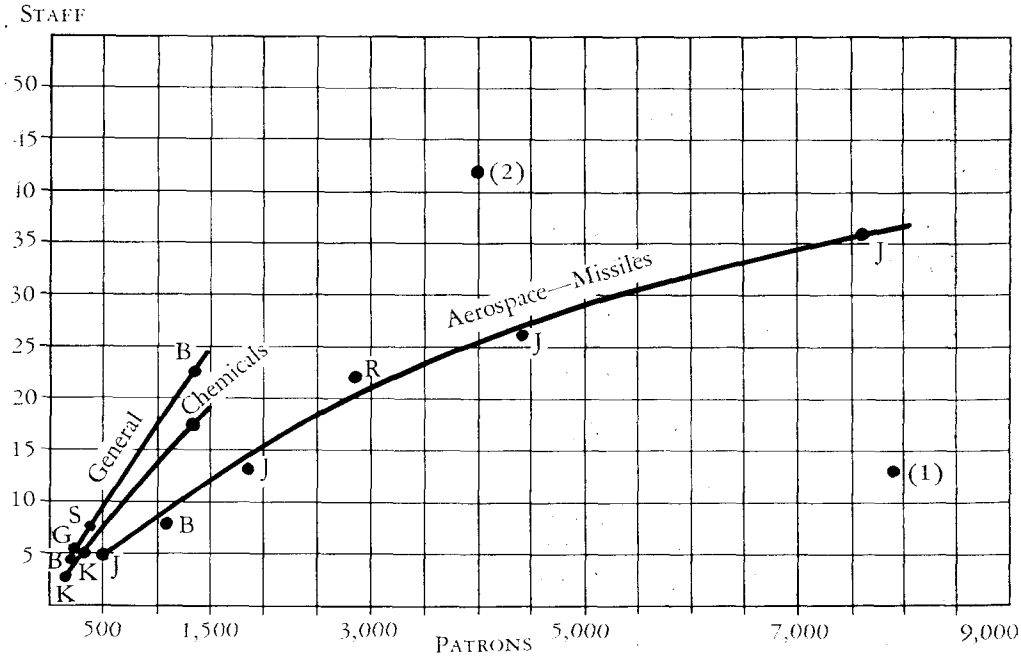
The library size graph displays three curves, one for special libraries in general, one for chemical information services, and one for aerospace-missile industry libraries.

The general curve follows three points: Gibson's average of five staff members for the average library serving 236 patrons, Sharp's average of seven staff members serving 340 patrons, and Bedsole's average of twenty-three serving 1,331 patrons.

The chemicals industry curve follows three points taken from W. T. Knox's report on the symposium on the administration of technical information groups and one point from Bedsole. According to this curve the average chemical industry information center or library serving 250 primary patrons would employ five staff members; the average center serving 500 primary patrons would employ eight staff members, and the average center serving 1,000 primary patrons would employ thirteen or fourteen staff members.

The aerospace-missiles industry curve fol-

Graph 1. Size of Staff



lows four points taken from Jones, one point taken from Bedsole, and one point taken from Rupprecht. In deriving the points taken from Jones the two non-industrial libraries he surveyed were eliminated. This left one library serving fewer than 1,000 patrons, five serving 1,000 to 3,000 patrons, and seven serving more than 3,000 patrons. Jones's overall average showed twenty-six or twenty-seven people serving about 4,400 patrons. Bedsole's average aircraft-missile industry library served 1,022 patrons with 8.4 staff members, and Rupprecht's average missile industry library served about 2,900 with twenty-two staff members. According to this aerospace-missile industry curve the average information service in this industry serving 1,000 primary people would employ eight or nine staff members, the average library serving 3,000 would employ twenty-one people, and the average library serving 7,500 would employ thirty-five or thirty-six.

Note that all the points on these curves, except the first Jones point, represent averages—not individual libraries—and even these averages do not fall exactly on these curves. But is it entirely coincidence that these points when plotted so strongly suggest curves? Probably not. If it is not entirely coincidence, what is the significance to you if your library falls markedly above or below the curve appropriate to the industry you serve?

I know someone in the aerospace industry whose library is serving about 8,000 with a staff of thirteen. This puts her library far below the aerospace-missile industry curve. If this curve has no significance, the possibility that the 8,000 being served by these thirteen are getting an entirely adequate information service is just as great as is the possibility that they are receiving service which is not up to their needs. If, on the other hand, the probability that service is inadequate increases the farther one drops below the line, then the curve does have some significance and could be of great assistance in obtaining budgetary support for improved service.

I also know someone whose library is serving about 4,000 with forty-two staff members. This puts his library noticeably above the aerospace-missile industry curve. If the curve has no significance then the possibility of the service given by this library being inadequate is just as great as is the possibility that it is acceptable. But if, on the other hand, the probability that service is superior increases the farther one moves above the curve, then, again, the curve does have some significance.

Cost Per Patron

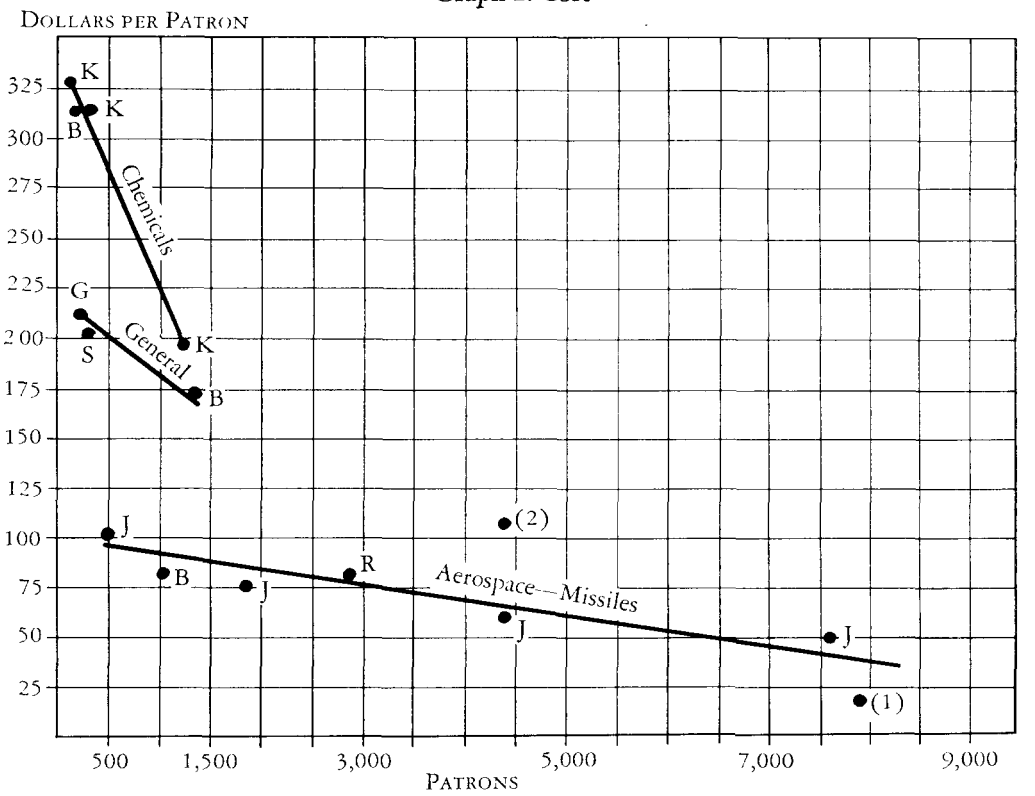
The next graph represents per patron cost of library service. This graph shows three straight lines, one representing the per patron cost of chemical information services, another the per patron cost of general industry libraries, and the last the cost of aerospace-missile industry libraries. These lines were derived by assuming an average cost of $15,000 per staff member to operate a chemical information center or library and an average cost of $10,000 per staff member to operate a general industry library or an aerospace-missile industry library. They also assume that about 70 per cent of a library's total budget goes for personnel and about 20 per cent for books and periodicals. Both the $15,000 and the $10,000 figure are probably average to low. The cost of supporting chemical information services was reported at the symposium on the administration of technical information groups to range from something over $10,000 to something over $20,000. This was eight or nine years ago. The $10,000 figure reflects a personal knowledge of four different budgets.

The points generating these cost lines come from the same sources as do the points which generated the library size curves on the first graph. The chemical industry line is suggested by points taken from Knox and Bedsole, the general industry line by points taken from Gibson, Sharp, and Bedsole, and the aerospace-missile industry line by points taken from Jones, Rupprecht, and Bedsole.

According to the chemical industry line, the average company employing 250 scientists spends $310 to $315 per scientist on library service, while the average companies employing 500 and 1,000 scientists spend, respectively, $285 and $230 per scientist on library service.

In sharp contrast to the chemical industry, the line for the aerospace-missile industry shows a much lower level of monetary support for information services but also a much lower rate of decline in that support as the

Graph 2. Cost



number of primary patrons served increases. The lower rate of support may be explained by the comparatively high proportion of genuine research personnel served by chemical information services.

According to the aerospace-missile industry line the average company employing 1,000 primary information service patrons spends about $90 per patron on library service, while average companies employing 3,000, 5,000, and 7,000 primary patrons spend, respectively, about $75, $60, and $45 per patron per year.

If we plot the two libraries I located on the first graph also on this graph, the first (the one with thirteen staff members serving 8,000) appears to be supported by about $16.50 per patron (less than half the average) and the second appears to be supported by about $105 per patron (about 40 per cent above the average). The contrast is certainly striking—but is it significant? Can we predict without knowing anything more at all about these libraries that the service given by the first is probably not adequate, and the service given by the second is probably superior? If we can, then these lines do have some significance and, if developed and adequately documented, could be of great value to librarians needing quantitative support for their contention that the services they administer require additional support.

Any librarian's interpretation of the relative position his library occupies on this graph will be influenced by how closely his over-all budget approximates the $10,000, $15,000, or whatever amount per staff member is found to be average for his industry and how closely his personnel expenditures approximate 70 per cent and his publications 20 per cent of his over-all budget. For instance, a library's per staff member expenditure may be significantly over the industry average while its per patron support is at the same time significantly under the industry average. An obvious reason for this could be understaffing—personnel expenditures well under 70 per cent and publications expendi-

tures over 20 per cent. In a case like this a graph like this could be a great help in communicating the problem to management.

In his January report to SLA's Board of Directors, Bill Woods said, "The Special Libraries Association should take more initiative in developing a statistical collection program for special libraries." If it can be shown that graphs such as these have validity, there could be none better situated to originate, distribute, and maintain them than the Association—and none better qualified to explain their limitations and proper applications.

Space Per Patron

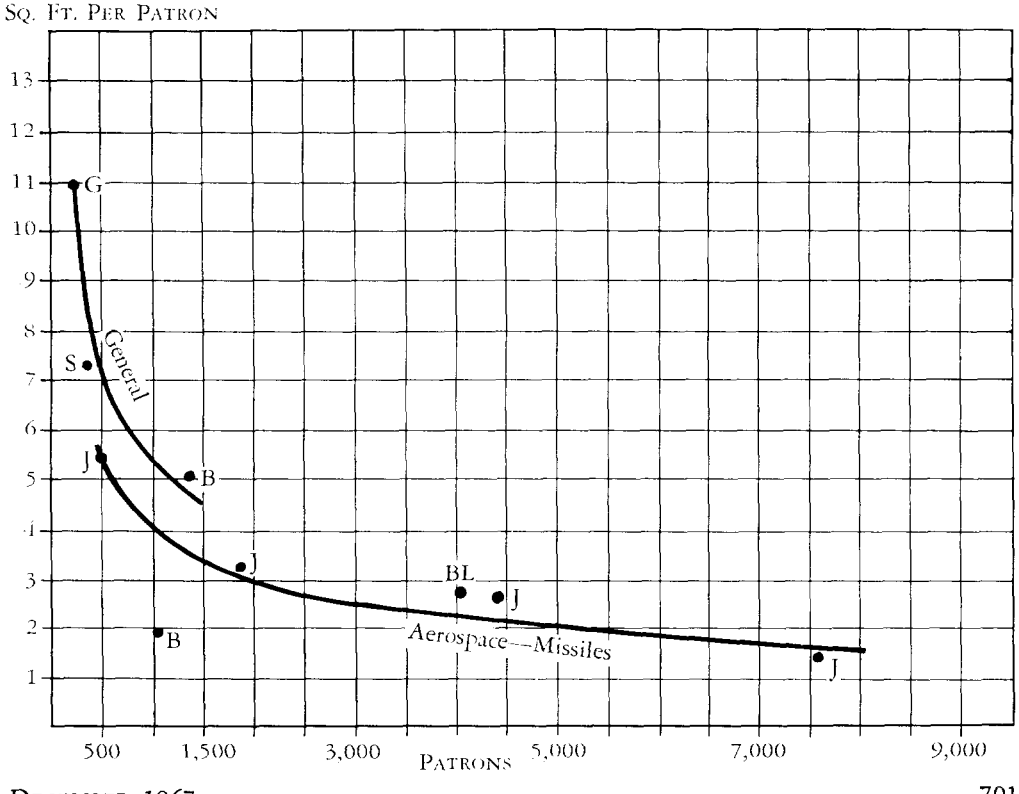
The third graph shows space provided per patron. On this graph there are only two lines—one following points taken from Gibson, Sharp and Bedsole, and one for the aerospace-missile industry taken from space figures given by Jones. A curve for libraries serving the chemical industry is not shown because there was only one point available, from Bedsole.

The validity of the aerospace-missile industry curve shown here is tarnished by the position on the graph of the space point for aircraft-missile industry libraries taken from Bedsole. The Bedsole point shows the average space provided per patron in libraries in this industry serving about 1,000 primary patrons to be 1.9 square feet, but this falls quite distant from the Jones curve.

I am encouraged to believe that there may be a valid space curve—or curves—by Masse Bloomfield's experience in collecting space statistics when he conducted the survey of nine aerospace libraries (see p. 688). The space statistics he collected were plotted on log-log paper and produced a perfectly straight line. The over-all average for the libraries surveyed by Bloomfield is 2.7 sq. feet per patron for libraries serving 4,000 and the over-all average in the Jones survey was 2.6 sq. feet per patron for libraries serving 4,400.

When I started plotting points taken from the various surveys I have mentioned, it seemed logical that some patterns would

Graph 3. Space



show up, but not at all certain. Since all special libraries are supposed to be different and essentially incomparable, there was a distinct possibility that these statistics would confirm tha. reputation by displaying chaos, an utter absence of patterning. The fact that some curves do show up seems to indicate that all is not necessarily clutter—but there was enough noise generated to make it clear that a good deal of work does need to be done in this area before the degree of reliance to be placed in curves like these or their application is fully understood.

Take the first graph. The different positions on the graph of the chemical industry and aerospace-missile industry curves may be caused in part by a different definition in the two industries of "primary patron." In the chemical industry this is usually a scientist, but in the aerospace industry it is often any salaried person. It is appropriate that there be a difference in this definition from industry to industry, but it is also important that all those reporting statistics for any one industry be agreed on their definitions of terms.

One of the reasons that the first library spotted on this graph, the one serving 8,000 with thirteen, falls so far below the curve may be that the need for service by the group served by this library is not nearly as great as that of the group served by the second library named, the library serving 4,000 with forty-two. If so, the need for service is not sufficiently defined simply by differentiating libraries by industry served. Within particular industries, such as the aerospace industry, it may be necessary to further delineate need by identifying more exactly the kinds of patrons served and their relative numbers. For instance, it may be necessary to identify the two major classes of personnel served, such as development engineers (50 per cent) and administrative personnel (20 per cent), and so forth. Also, it may be more realistic to read the curves on this graph not as lines, but as bands, the bands allowing for differences in information needs.

A second explanation for the first library is spotted on this graph falling so far below the curve might be found in the number of services this library offers. It might be that in this company the organization which handles the acquisition, processing, and distributing or circulating of internally or externally generated reports is not a part of the library. Without defining basic services and then learning what percentage of these services is offered by the participants in a survey, we may compare half libraries against whole libraries without in any way distinguishing them.

To summarize briefly: Areas to be explored by comparative studies include, besides salaries, staff size as a function of primary patrons served, cost in terms of patron support, space per patron, and collection composition, at least. That comparative statistics do have some validity seems to be borne out by the tendency of information gathered in previous studies to fall into patterns. Presentation of data in graphic form seems to generate curves peculiar to particular industries. And, finally, the quality of comparative technical library statistics can be improved by defining terms, by delineating within industries the kinds of patrons served and their relative numbers, and by detailing the basic services provided by each library.

Almost every special librarian uses comparative statistics at one time or another, and sometimes repeatedly, as budgetary tools—as offensive and defensive tools—but no special librarian accepts their validity unquestioningly. There is evidence that they can be made valid when properly gathered and interpreted, and we owe it to the customers we serve and the managements we report to to develop the proper procedures and the necessary know-how.

References

1. BEDSOLE, D. T. Library systems in large industrial corporations. Ann Arbor, University of Michigan, 1961 (PH.D. dissertation)
2. GIBSON, Eleanor B. What Can Be Learned From a Library Survey? In *Special Libraries*, April 1957, p. 133-8.
3. JONES, H. W. Survey of aerospace special libraries in Los Angeles area. Rev. Dec. 1966 (unpublished sheet).
4. KNOX, W. T. Administration of Technical-Information Groups. In *Industrial and Engineering Chemistry*, March 1959, p. 48A-61A.
5. RUPPRECHT, T. A. Library Budgets in the Missile Business: The State of the Art. In *Sci-Tech News*, Summer 1962, p. 71-2.
6. SHARP, H. S. A Survey of Electronics Libraries. In *Special Libraries*, April 1958, p. 157-61.
7. Special Libraries Association. Professional Standards Committee. Profiles of Special Libraries. In *Special Libraries*, March—June 1966.

This paper describes in plain language the system by which American standards are formulated, reviewed, and approved, with special reference to information science. Examples of specific needs of this field for which standards are now being codified are cited together with the relevant subcommittees of USASI/Z39 working on them. The importance of national standards in this and other fields is discussed, with particular references made to ongoing projects touching various problem areas. The fundamental principles of standards work are stated.

The Place of Standards in the New Technology of Information Science

JERROLD ORNE

FOR SOMETHING LIKE ten years now, my contacts with the scientific and technical community have been limited. The complexities of managing a sizeable academic library enterprise during that time have obliged me to concentrate my efforts on matters quite different from those of the years when I actively shared the interests of sci-tech librarians. I am convinced that the time is long gone when applied science and basic science could develop independently; for similar reasons, the time is long gone when the technology of information science could be developed independently, without continuous interaction with the academic community and with the whole of society.

Let us first set some limits, by definition, on the parameters of the subject, the place of standards in the new technology of information science. Let us say that *information science* is any method, pattern, or system designed to produce useful data when and where it is needed, in appropriate volume. The *technology* of information science may be the sum of or any one of the component elements needed for such methods, patterns, or systems. Now for *standard,* let us start with a discrete, unique definition of scope, design, and application of an object, a system, or a device, based upon near-universal concurrence of producer and consumer bodies. Without doubt dictionary definitions would be more concise, but they would not lend themselves as well to my theme. Having thus set the stage, let me talk briefly about standards and how they grow.

Dr. Orne, who is university librarian at the University of North Carolina and chairman of the USASI Committee Z39, presented his paper at the Science Technology Division meeting, May 30, 1967, during the 58th annual SLA Convention in New York.

As an academic, devoted to thorough and complete historical documentation, perhaps we should start with the standardization of the size of clubs used by Neanderthal man, an agreement of sorts, which made for a fair fight. This could be developed today to standard bullet sizes, which enable us today to pick up ammunition or guns from our fallen foes to use on more of their kind. Let me cite a few other examples of hardware more familiar to all. Take the evolution of the wheel and rubber tires used on automobiles. This is a good example, because today we are all confused by a dual system of tire measures. Mark this confusion; every time you buy tires now, you have to double check your size statement. If you add to this the metric system of numbering used on foreign car tires, the confusion is multiplied. Take a second example from the automotive world, and think of the special set of wrenches you must have to turn a nut or a bolt on your Volkswagen because European standard sizes are metric while our are measured in inches. To come even closer to home, compare the numerous types of vacuum radio tubes of not so long ago with the narrow range still in use and the swiftly standardizing array of transistors we now have. With the tremendous surge of miniaturization, led by the demands of space exploration, we now face

steadily increasing pressure for standardization of units. Now to bring this home to those concerned with information science and its tools, consider what standardized plug-in units of a program for computers could and does do for you.

In a keynote address[1] at the U. S. American Standards Institute's 17th National Conference, Dr. J. Herbert Holloman, then Acting Under Secretary of Commerce set forth his credo of *Standards and the Public Interest.* It outlines in plain language the forces which impel us into ever-increasing involvement with standardization. He makes the careful distinction between voluntary product standards based upon economic needs, and the type of mandatory standard enforced by legislative action arising from the obligation to protect the public. The generalizations he makes are as effective in the area of information science as in automobile tires, wrenches, or nuts and bolts. You may not think it so strange that I put information science and nuts and bolts into the same sentence. The good Lord knows we've got plenty of nuts in information science and they are constantly bolting!

The cabalistic number system (Z39, PH5, X3) has always been a source of jokes, knowing glances, and ribald allusions, particularly since 007 hit the scene. I will sprint through a rapid review of our American system of standardization, in order to make sure no one later falls into the path of error.

The United States of America Standards Institute (formerly the American Standards Association) is a federation of trade, technical, and professional societies, companies, government agencies, labor and consumer interests. Many of the USA Standards it approves as national standards are developed by USA Standards committees which work in one particular field. Each committee has a code number: X3 is concerned with information processing; PH5 with photocopying; Z39 with library work and documentation.

A USA Standards committee is born when an organization or individual petitions the Institute for a standard and the Institute finds that there is no existing standard on the subject available for approval as a USA Standard and no organization in the field willing and able to undertake its development. It then may call a general conference of all organizations with a substantial interest in the subject and ask it to recommend for or against development of the standard. If the conference agrees that the work should be undertaken and the Institute standards board having jurisdiction in the field concurs, a USA Standards committee is formed.

An organization having a major interest in the work or one of the Institute standards boards is then named administrative sponsor of the committee. In the case of Z39, the sponsor is the Council of National Library Associations. The sponsor invites to membership on the committee all organizations with a substantial interest in the work. Representation on the committee must be balanced among producers, distributors, consumers, and general interests, so that no one organization or group may dominate or be especially favored by the work.

The actual development of a standard within a USA Standards committee is often carried out by subcommittees, groups of experts who are not necessarily members of the parent committee. A draft produced by a subcommittee may be widely distributed for criticism and revised in light of the comments received. When a fairly definitive draft is achieved, representing the best and most universally accepted practices of every interested agency in the field, the secretary of the Standards committee sends it out to ballot of all members of the committee. Since they will have already reviewed and contributed to formation of the draft, the presumption at this point is that an affirmative ballot will be cast. When all votes are in, the results are transmitted to the sponsor, who sends the proposed draft standard to USASI with its recommendation on approval. The standards board having jurisdiction over the committee then reviews the record of development of the standard, the tabulation of committee vote, and reasons for negative votes, if any, to determine if the concerned interests have achieved substantial agreement —consensus—on the standard's provisions. If it is satisfied that consensus exists, it will approve the document as a USA Standard. This is, in brief, the standards process.

There is no lack of cogent analyses of the state of information science in our profes-

[1] *Magazine of Standards,* vol. 38, no. 3, March, 1967, pp. 67-73.

sional literature. In fact, the bibliography of this subject would tax the capacity of a sizeable machine installation. Let me direct your attention to only a few items. You would do well to start with the survey of library automation by Donald Black and Earl Farley in the ADI Annual Review for 1966.[2] If you will look at Jesse Shera's latest, "Librarians Against Machines,"[3] it will not be necessary for me to do a historical review. Then if you will read Brad Rogers' "Librarianship in a World of Machines,"[4] you will come back from Shera's lengthy peroration to Rogers' homespun, plain facts. If I were to add one more item to your heavy burden of reading, it would be that lucid, clear-eyed analysis "American Automation in Action,"[5] written by an Australian following a six-month-long tour of many of our highly publicized automated operations.

I would like to use this opportunity to develop better understanding of the place of standards in the numerous experimental information retrieval or selective dissemination programs. Let me suggest first, however, that the scientific community of my topic is not unique. Information needs of other fields are not much different, and there is just as much need in any field, depending upon who needs it. What we are concerned with, then, is, "What have standards to do with the production, analysis and delivery of information?"

The logic needed to answer this question is disarmingly simple. The production of any information is pointless if it is not recorded. Then what form shall this record take? Any form the scientist elects? Hardly! He must publish or announce his findings in some recognized form, provide an abstract, or assign predetermined descriptors to guide any who may wish to use his product. This does have a familiar ring. We are talking about standardized data elements. Now what about "analysis"? How can anyone use another's analysis if there is not a common vocabulary or accepted definitions? Again we are talking about standards. And how does "delivery" fit in this pattern? If we had all the standards for production and analysis, what good would the information be if we had no universal device for carrying this information wherever it might be needed? Again, we must have a communication system so standardized that it can be placed anywhere and used anywhere in a uniform manner. Without this, the information may be so garbled that it might just as well be locked in the brain from which it came. It is inept or inadequate preparation of standards that keeps the long list of mechanized devices or systems experimental in the world of information science. Brad Rogers said, in the paper cited earlier, "I often get the impression that our society is really divided between the exhorters and the doers, and that the rate of increase of the former is far outstripping the latter class." In the area of standards now, I am here exhorting all special librarians to be doers, while enjoying the best of both classes myself.

Project Marc is a noble effort to solve the rigorous problems of bibliographical data delivery. One subcommittee of Z39, led by Mrs. Henriette Avram, is striving to develop standards for Machine Input Records. Only when such standards can be provided will Marc be operationally useful. Very early in the effort it became evident to her that what we call simple alphabetic filing is not so simple for stupid machines. Thus a new subcommittee of Z39 was born, led by Dr. Theodore Hines at Columbia and devoting its full attention to the development of a standard for filing. Mrs. Avram also realized that there was no common acceptance of what are essential bibliographic data elements, and another offshoot became a contract operation set in motion to identify and categorize in a matrix all types of bibliographic data elements. The report of this investigation is about to appear. In the varying fields of science, the form of an abstract has long been a hotly debated subject. Faced now with an imperative requirement for uniformity to enable the machines to digest and regurgitate abstracted data, a renewed effort is now being mounted by another subcommittee of Z39, headed by Dr. John Gribbin of Tulane.

---

[2] American Documentation Institute. *Annual Review of Information Science and Technology,* vol. 1, 1966. New York, Wiley, 1966, pp. 273-303.
[3] *Science,* vol. 156, pp. 746-50, May 12, 1967.
[4] Peabody Library School, George Peabody College for Teachers, Nashville, Tennessee, May 17, 1966, 22p.
[5] Bryan, Harrison. American Automation in Action, *Library Journal,* vol. 92, no. 2, January 15, 1967, pp. 189-196.

The contentious area of subject access is the province of a large subcommittee on indexing, with John Rothman as chairman. His group is working on a standard for indexes which they hope will serve equally well for manual and machine systems. Another team is cultivating the fertile soil of bibliographic citations, led by Dr. Maurice Tauber. A successful standard in this field would ease the labors of writers and editors a hundredfold, to say nothing of the advantages to the writers themselves. In one specific area of citation, standardized abbreviations of periodical title words have been adopted as a national standard. Z39 is also concerned with areas of the publishing industry related to library work and documentation. A representative of the publishing industry accompanies Z39's delegation to Moscow to discuss a standard system of book numbering for publishers on an international plane.

Many may wonder what connection this has with the numerous occasional standards used or seen, produced by organizations or groups quite independent not only of USASI, but of one another. It is just because of these variable sources that this discussion has importance.

You have all seen and many of you have participated in the production of standards on various levels. These range from *a)* a single decision to standardize the form of a company report series, to *z)* a national agreement on a universal system of numbering serial publications. Standards can be, and are, developed in many places and at many levels. The fundamental principle remains the same. The usefulness of any standard is exactly proportionate to the extent of its acceptance and use. That is, a local standard is good if it is accepted and used throughout the local area. There can be good standards within geographic areas, within industry or organizational units, within governmental structure, in fact, in almost any group of two or more individuals. In any given field, the acceptance and use of a national standard is fairly complex and difficult to achieve. One can start with any lesser form of standard as a working draft, and if the material is sound and has, in fact, national usefulness, it can readily be brought into the appropriate channels for eventual production as a national standard. By now you are all aware of the implicit voluntary character of such standards. This point deserves emphasis. It marks the essential difference between our national approach to standards and that of many more authoritarian nations. In a recent appearance at hearings before the Senate Commerce Committee, the case for voluntary codes was succinctly made by Francis K. McCune,[6] the president of the USA Standards Institute,

"Voluntary codes are good codes because they are developed by knowledgeable and competent people,"

"Voluntary codes meet the needs of society because all segments of the economy interested in their application are given an opportunity to participate in their evolution and development,"

"Voluntary codes are unbiased codes," and

"Voluntary codes are living codes."

The special librarian has only to consider how his own efforts up to the present time fit in this pattern. If he has striven alone or with others to codify some standard, he knows how much expertise is needed. He knows how critical it is that every concerned person or group must be involved in the work, and he knows that any bias, whether for economic or personal reasons, must be eliminated. If the work has created a living standard on any level, and if it is sound, it will remain alive and grow stronger and finally attain national acceptance. The librarian is on sound ground in working for a standard in any area of information science, so long as he remembers these criteria. The product will have to face rigorous tests of acceptance in use, and it will endure or disappear depending upon how well cultivated is the soil in which it grows. My own years of work in the standards field have brought me the conviction that no work on a standards problem is ever wasted; the best and only the best of it comes through and endures. Your field is beset by a multitude of disparate influences, many of which are something less than benign. You will inevitably overcome these and the USA Standards Institute, Z39, and perhaps by then other sectional committees which you will yourselves initiate will be as familiar to you as 007 is today.

[6] McCune, Francis K. *The Case for Voluntary Codes.* New York, USASI, 1967. 8 pp.

This is the fourth in an irregular series featuring the history, purpose, and scope of the professional special library associations, other than SLA, prepared especially for the readers of *Special Libraries.*

The Association of Jewish Libraries

JOSEPH YENISH

THE ASSOCIATION OF JEWISH LIBRARIES was created in 1965 by the merger of two bodies which until then functioned separately. The members of the two bodies authorized the merger by a mail referendum in April 1966, and proclaimed it at the founding convention of the Association at Gratz College in Philadelphia, Pennsylvania, in June 1966. The second convention of the association was held in Boston, Massachusetts, in June 1967; the third convention is tentatively scheduled for June 1968 in Cincinnati, Ohio.

The new Association, sensing that it had to respect the purposes of its two units and yet produce much more than merely the sum of their former achievements, formulated the following purposes:

1. To promote and improve library services and professional standards in all Jewish libraries.
2. To serve as a center of dissemination of Jewish library information and guidance.
3. To encourage the establishment of Jewish libraries.
4. To promote publication of literature which will be of assistance to Jewish librarianship.
5. To encourage people to enter the field of librarianship.

The new Association (for which a general governing apparatus was provided) organized itself into two divisions, each with its own government, autonomous but consistent with the general one: *1)* the Research and Special Library Division, comprising mainly members of the former Jewish Librarians Association; and *2)* the Synagogue, School and Center Division, comprising mostly members of the former Jewish Library Association. A substantial number of members now belong to both divisions.

Mr. Yenish, public relations officer of the Association of Jewish Libraries, is head librarian at Gratz College, Philadelphia, Pennsylvania.

The excitement of newness pervades the Association. It is engaged in refining the essence and scope of its projects and building the apparatus for their implementation. Just as the United States of America at the moment of its formation had no "record" or "history" of its own—only those of the colonies which formed it—the Association has only the histories of its formerly separate parts. A recapitulation of these should enhance the understanding not only of the foundations upon which the new Association has to build but also of the services and accomplishments which it hopes to bring about.

The Jewish Librarians Association was organized in New York City in October 1946, mainly through the efforts of Sophie Udin, a dynamo of a woman who then was librarian of the Zionist Archives and Library, and later, librarian of the Kenesset, until her death in Jerusalem in 1960. Among the founding members were the late Dr. Alexander Marx of the Jewish Theological Seminary of America; the late Dr. Joshua Bloch of the Jewish Division of the New York Public Library; Harry J. Alderman of the American Jewish Committee Library; Rabbi Philip Goodman of the Jewish Book Council of America; Jacob Dienstag of Yeshiva University; Dr. I. Edward Kiev of the Jewish Institute of Religion; Rabbi Isidore S. Meyer of the American Jewish Historical Society.

The membership of this Association grouped itself around several large, influential, and prestigious academic and com-

Officers of the Association of Jewish Libraries include, left to right, Dr. Charles Berlin, president-elect; Jacob I. Dienstag, president; and Herbert C. Zafren, first president of the Association.

munal institutions (mostly in Greater New York City) whose librarians were outstanding professionals or scholars or both. They felt a need for fraternization; they also talked of interprofessional tools—of bibliographies, union catalogs, and indexes. In the course of their history they produced a bibliography of Dr. Isaac Rivkind's writings in honor of his twenty-five years of service in the library of the Jewish Theological Seminary; they also published a checklist of periodicals in two large libraries in New York City with the intent of expanding it to include the holdings of as many Jewish libraries as possible. The record shows that they prodded each other to greater efforts. But the spark of their intentions did not break forth into the minimum flame necessary for organizational boiling. Because of the succession of leaders' departures, the narrowness of the structure, and its members' preoccupation with their unique problems, the organization experienced several demises and rebirths. The latest resurgence, a very firm one, under a young and dynamic leadership, occurred in January 1965. As one of its imperatives, vigorously championed by President Herbert Zafren of the Hebrew Union College in Cincinnati, it determined to contact and suggest merger to the other Jewish library organization.

The Jewish Library Association was organized by a founding convention in Atlantic City, New Jersey, in 1962. It grew out of informal conversations among a number of Jewish librarians—some of whom had the support of well-established local associations—who met in Cleveland at the ALA convention a year before. The second convention of the Jewish Library Association was held in Cleveland in 1963; the third in New York City in 1964; the last in Detroit in 1965. The Detroit Convention had before it the merger proposal of the other Jewish library organization, to which it reacted warmly and appointed a plenipotentiary committee to negotiate the terms.

The members of the Jewish Library Association, who reached into twenty-one states, the District of Columbia and the provinces of Ontario and Quebec, consisted largely of librarians and library workers in synagogues and community centers. The impulse to establish these libraries, and the current, almost passionate drive to expand and make them more useful is one of the earmarks which characterize the evolution of the American Jewish community. The immigrant, Yiddish-speaking grandparents of this community are rapidly being gathered unto eternity; almost all the Jews in the United States today are native born, most of them of native parents. They are "settled"; of comfortable means; culture-minded; eager to learn about their traditions and historical roots; eager to respond intelligently and responsibly to the ecumenical breezes which blow about. The synagogues, which often are also community centers and almost always conduct a religious school, have expanded. So have the community centers which are not part of a synagogue. Many of these institutions now operate some kind of a library; others are planning to organize one. Often the library serves

the school; it also serves its adult members. A glow of idealism surrounds these libraries; but the problems which they face—of finances, of personnel, of know-how—are very great.

Among the persons who head some of these libraries are top-notch professionals. One of them is Miriam Leikind, of the Temple Library in Cleveland, Ohio, who together with two dedicated colleagues began in 1963 to publish an *Index to Jewish Periodicals* patterned after H. W. Wilson Company's *Reader's Guide to Periodical Literature*. Only their most self-sacrificing perseverance enabled them to see this publication through during the triennium of its existence. Today it enjoys the aid of a private gift; and is published by the Cleveland College of Jewish Studies to whom the compilers have cheerfully transferred the copyright. Another leader is Mrs. Mae Weine, of Camden, New Jersey, who, with the assistance of the Greater Philadelphia Jewish Library Association, has compiled the "Weine" classification which (except for the large academic and special libraries) is gaining widening acceptance. Most of the workers in these libraries, though many have become wise and practiced by experience, are not library school graduates. They are in search for counsel. As a consequence the conventions of this group did not emphasize theoretical speeches; their programs were crammed with intensive work sessions. It is likely to continue to be so during future get-togethers of these library workers.

But in the future there will be a difference. For now all who are in the service of Jewish libraries have available to them a unified Association. The already strong impetus for increased professionalization among the workers of the former Jewish Library Association will be enhanced by the addition of their colleagues from the former Jewish Librarians Association. With increased resources, increased membership and increased influence the new Association feels more confident of being able to carry out some of the tasks before it. Typical of these are: *1)* publication of bibliographies and indexes; *2)* assistance in the standardization of cataloging and classification practices; *3)* promotion of the recruitment of personnel; *4)* establishment of a center of Jewish library information.

This report of the new Association is an announcement of one segment of the library profession, made in a spirit of responsibility to the profession as a whole, that it has assumed a series of tasks. It hopes to be allowed to give a further account of itself in the future.

"Documentation of documentation" has become the concern of a number of centers in the world; there is one center, however, that deserves special attention: the Information Department in the Center for Library Science and Methodology, Budapest. Here, 217 entire journals in the field of library and information science are currently documented as well as a number of abstract services. The report describes the information services of this center as well as its cataloging method and printing processes. The special library attached to the center with its 25,000 volumes is dealt with equally. The three advantages of the center's documentation system are pointed out.

Information Department in the Center for Library Science and Methodology, Budapest

INGETRAUT DAHLBERG

UNDER A 1956 law a division was established within the Hungarian National Library (Orszagos Szechenyi Könyvtar) which was to concern itself particularly with matters of library science. This division started on January 1, 1959, as the Center for Library Science and Methodology. It is comprised of six departments and is housed in a building located near the National Library. Besides departments for public libraries, scientific special libraries, and library training, the Center has an information department which acts as a documentation and information center for library and information sciences. Attached to it is a special library on these combined subjects. The library and documentation center have been headed by Pal Boday since 1959.

Publications

The literature on documentation is processed by the information department in a scope and manner which, to my knowledge, is not duplicated in any other center in the world. This results in the following publications: two journals, called *Express Information* in which two to four weeks after publication the newest special literature on documentation and library science arranged according to journal issues is announced by furnishing original and translated titles, supplemented by short abstracts if available. One journal limits itself to the titles of Hungarian literature—supplemented by annotations—in the documentation field, while the other one announces all the titles of "foreign" documentation literature contained either in the 217 journals received by the aforementioned special library or in some three hundred other journals accessible from abstract services. In addition to these two "current awareness services" the department publishes a bimonthly journal *Könyvtari Figyelö (Library Review),* which contains original articles, translations, reports, summaries, and news for librarians and documentalists in Hungary, offering also an English contents list since 1966. (This journal is by no means the only Hungarian one in our subject field; other centers also publish library and documentation journals; reportedly there are altogether ten Hungarian special journals in library science and documentation.)*

Printing of the Journals and Their Indexes

For maximum ease of printing the *Express Information* journals, all bibliographical entries on catalog cards are typed (since 1959) so that this form can be used for the compilation of each issue of *Express Information.*

* The contribution by L. Bereczky: "Library Serials" in: Hungarian Library Directory, 2nd vol., Budapest 1965, p. 221-232 lists altogether 24 library and documentation journals for Hungary, some of which are of regional significance only.

The method works as follows: the catalog cards with the newest entries are stacked in close succession.† Then they are copied on an aluminum foil by a Xerox machine (acquired as far back as 1959) and immediately offset-printed. In all cases where content sheets *(Inhaltsfahnen)* with the abstracts of journal articles can be used, they are cut out and added to the titles for further information. Each title carries a number which serves as the order symbol for the catalog cards in the card file. Together with the bibliographical entry (on cards in international library format) author reference cards are typed (for personal and corporate authors; for designations of products, programs or systems; in the case of anonymous works, also for their titles and for titles of series) in a fixed way carrying only the name or designation and the number. By this method the cards can be arranged by stacking and can be used for the printing of indexes.

The printing of one issue of the usually hundred-page journal *Könyvtari Figyelö* is handled in an easy and inexpensive way also. The technical preparations for the printing process, the typing of the pages with an IDEAL typewriter, the editing and making up of an issue are done by some of the ten assistants of Pal Boday's department itself. Only the offset printing is delegated to the reprographic department which services the whole Center. The masters for the offset printing, however, are produced by Xerox machine in the information department.

Cataloging

Documentation by the information department is based on the principle of total exploitation of its special journals. This means that all the titles of a given journal are documented and incorporated into the card file, even if some of them deal only with fringe subjects and are of minor interest. This method is advantageous in that the entries can be typed up almost automatically by office personnel without previous selection of articles from the journals concerned. The articles are classified in advance and the titles are translated into Hungarian as necessary.

† Schindler, B.: The Preparation of the Bibliography of Agriculture. Chicago Univ. 1951. Also in Libri 4 (1954) No. 2 p. 143-52.

For the encoding of the literature on library science and documentation the following classification system was set up:

1) Library and information science; problems of organization; education and training; standardization; conferences.
2) Publications which furnish a general survey; guidelines; statistics.
3) Types of libraries; special documentation fields and institutions.
4) Technical questions pertaining to libraries and documentation.
5) Organization at one single place, administration, personnel.
6) Control of stocks, acquisition, shelving, storage.
7) Cataloging, classification, classification systems.
8) Protection of stocks, bookbinding, bookhygienes.
9) Service to readers, user studies, propaganda for increased use of libraries.
10) Information work; general questions of information organization; history of bibliography and documentation; publication (editing) of documents; documentation services; patent documentation.
11) Bibliographies and documentation products.
12) Publication types; special collections.
13) Book science; publishers; book fairs.
14) Science in relation to documentation; history of science; general terminological problems; script and type; organization of science; research, etc.

Under this system three staff members of the information department classify all titles occurring. At the present time an investigation is under way to determine the best and fastest method for compiling subject indexes for the *Express Information* journals on the basis of the above mentioned classification

Mrs. Dahlberg is director of the Library and Documentation Center of the German Society for Documentation, Frankfurt, West Germany. This report was published in German in Nachrichten für Dokumentation.

system. Three pertinent methods are simultaneously being pursued: "manual," semi-mechanical (Peek-a-Boo card system), and mechanical (with punch cards) compilation.

As reported, the department has only one numerically arranged catalog which contains the complete bibliographical data of all entries. As additional tools there are a number of index catalogs: the author catalog and a source catalog. Abstract journals are exploited in the same manner as original journals, with one difference. The abstracts are Xerox copied, cut out, pasted on DIN A6 cards and deposited in a catalog together with cards of the original journals. In this way, for example, one can determine at a glance just how many abstracts of articles from the *Nachrichten für Dokumentation* were printed in the year 1964 in *Referativnyi Zhurnal.*

The (alphabetical) author catalog has a supplement which indicates just what abstracts have been published—and where—of any given paper of an author.

The Special Library

Attached to the documentation center is the special library of library science and documentation literature with 25,000 volumes. Its holdings are open to any user from all over the country, especially to the librarians of Hungary's two thousand libraries. Some two hundred loans are made each month.

The library is staffed by three librarians. Approximately 60 per cent of the publications are acquired through exchange, the rest are purchased or received as legal deposit. The annual acquisition rate amounts to three thousand entries, 217 journals are currently kept.

There is an alphabetical author and corporate author catalog, as well as an alphabetical title catalog in this special library. Also there is a systematic catalog, since each book is classified according to the UDC and can thus be retrieved for its subject content. A special list of UDC numbers with their terms in natural language was made up.

For statistical purposes a catalog of small edge-notched punch cards each measuring half the size of a machine punch card was set up. Onto the middle field of each card the bibliographical data of a book are copied and its formal data (size, date of issue, language of text, and so on) are indicated in the edge holes. Thus fast access to the formal indications of a book is assured.

The books are shelved in five different size groups according to current access in a sort of open compactus store with manual service. All the essential journals are bound.

Monthly accessions to the library are printed on lists or catalog cards. For the printing of these accession lists as well as of the cards, six bibliographical entries are transferred at one time to aluminum foils with the aid of the Xerox machine. Later this foil is cut into six plates which serve for the printing of the single cards for the library catalogs.

Administration

From 1959 to 1964 some four thousand bibliographical units from non-Hungarian literature were cataloged by the information department each year. In 1965 the number of entries increased to six thousand due to an enormous growth of published literature in the field. The annual number of Hungarian entries on documentation is approximately eight hundred.

The information department's budget includes a remarkably large sum for translation services, namely more than $3,000 per year. This makes it possible to announce all Hungarian documentation literature in English, German, or Russian. Furthermore, the most important English literature in the field is translated into Hungarian. All the translations available are collected in the special library while those translations of documents in library science or documentation from or into other foreign languages can be traced.

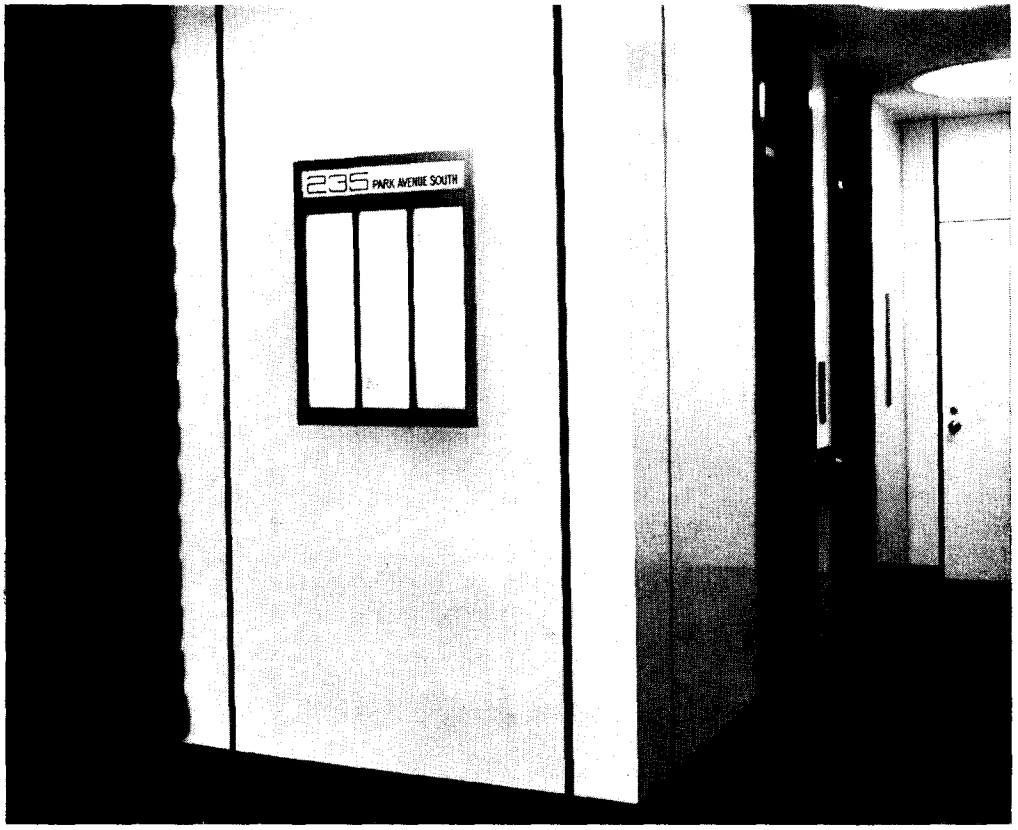
The Three Advantages of the System

1) The total exploitation of a certain number of journals in one field ensures complete documentation of literature of a given field as far as it is published in these journals.

2) The possibility of copying each entry in the same way as it is typed constitutes an inexpensive and fast way to provide information according to many different viewpoints with the aid of these very entries.

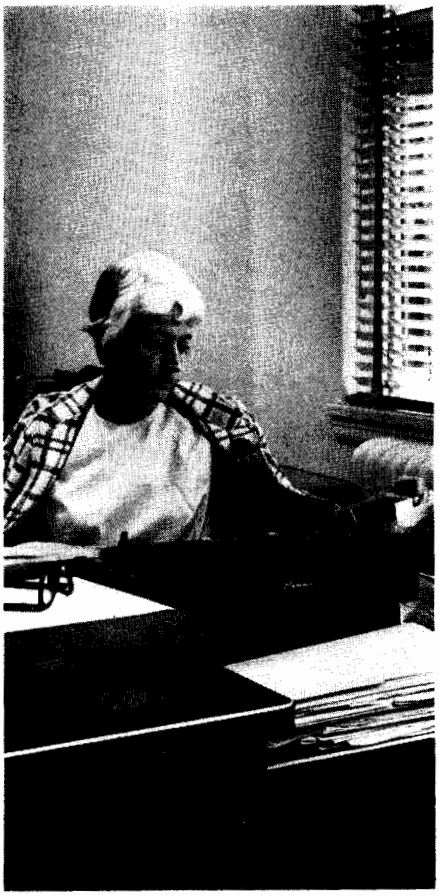
3) The procedure does not demand a costly apparatus; it is easy to handle and requires almost only semi-skilled personnel.

WELCOME TO SLA

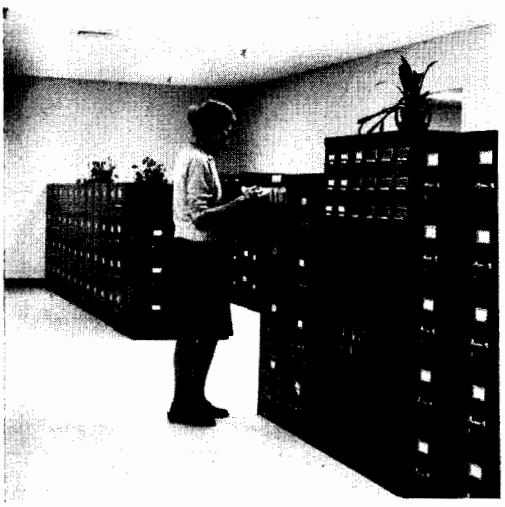


In September of this past year, SLA headquarters moved to shiny new eighth-floor offices at 235 Park Avenue South (Nineteenth Street). The cheerful lobby of the twelve-story building is shown above. SLA office space totals 5,700 square feet, as opposed to 4,600 square feet at 31 East Tenth Street, its headquarters from 1939 until the move. There are eleven separate offices, including the reception area, library and conference room, and staff room. SLA Receptionist Joan Mathews, answers a call on the monitor board at left. Park Avenue South, which was Fourth Avenue until the beginning of this decade, extends from below Thirty-Fourth Street down to Fifteenth Street.

Executive Director George H. Ginader, who joined SLA last September, is shown in his bright, airy office, which doubles as a small conference room (see partial view of table in above photo). Below, Guy R. Bell, Publications and Public Relations Director, and Editor of "Special Libraries," prepares to begin his next project. Publications and Public Relations Assistant Marguerite von Geyr is busy at her desk at right. Miss von Geyr left the Association in October, after the photographs were taken.

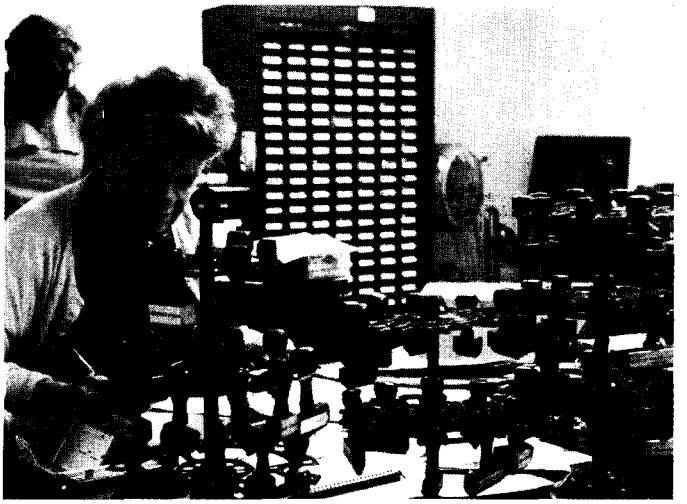


SLA staff members pictured at their desks on this page are, above left: Margaret Price, Fiscal Services Department Director; Mrs. Ellen Maky, Office Services Supervisor, above right. Below are Mrs. Sylvia Singer, left, Billing and Order Clerk, and Olga Matson, Accounting Clerk. In the foreground is Louis Polgar, an accountant.



Mrs. Edith Hughes, Library and Archives Clerk, in SLA's library, which contains reference books, directories, and periodicals pertaining to and about special libraries and special librarianship. There are bound copies of "Special Libraries," beginning with Volume I, No. I, dated January 1910, and of "Technical Book Review Index," starting with Volume I, 1935-6. In background: Mrs. Ann Buchanan, Editorial Secretary; at left: Mrs. Hughes at archive files; bottom: executive office "secretary's row." Pictured are Mrs. Buchanan, back to camera, and Mrs. Sylvia Bates, secretary to the Executive Director, in white sweater.

SLA's Addressing Service is handled by two full-time and one part-time personnel, under the direction of Ann Firelli, Director of Membership and Personnel Services. As of May 1, 1967, 24,501 plates were on file. Shown on the right are Mrs. Mary Thompson, Addressing Service Assistant, foreground, and Virginia Champ, Addressograph Assistant.



Constantly bursting with activity is SLA headquarters mail room. Here, incoming and outgoing mail is handled; stencils run on mimeograph machine, and small duplications made on a Xerox 914 Copier. Adjoining the mail room is the stock room, which contains office stock and bulk shipments of "Special Libraries" and SLA publications. Pictured are Mrs. Maky, Eugene Felicianno, who works part-time in the mail room, and Morris Karpen, Accounting Clerk.

Conference Preview

The January 1968 issue of *Special Libraries* will feature a list of committee members for the fifty-ninth annual Conference of SLA, which will be held at the Statler Hilton, Los Angeles, California, June 2-7. Watch for this and future Conference articles.

Naval Research Laboratory Library Celebrates Forty Years of Service

IN 1944, RUTH H. HOOKER, then librarian at the Naval Research Laboratory, published an article in *Special Libraries* (November 1944, 35:9, p. 442-4). During the time that has elapsed the library has expanded rapidly and, since this is our fortieth anniversary year, it seems appropriate to update the 1944 article.

At that time, the library had a floor area of 9,000 square feet, a staff of eight, a collection of 12,000 bound volumes, subscriptions to 200 periodical titles, a current awareness tool published twice a month, and we borrowed so many more items than we loaned that the librarian said the term for this operation should more properly be interlibrary borrowing instead of interlibrary loan. We served seven scientific divisions engaged in the research program at the Laboratory.

The Naval Research Laboratory is now referred to as the Corporate Laboratory of the Navy and is organized into two major departments, the Research Department and the Support Services Department. A director of research and three associates head the research program. Under their direction are sixteen scientific divisions: applications research, electronics, radar, radio, sound, electronic warfare, chemistry, mechanics, metallurgy, solid state, atmosphere and astrophysics, optical physics, ocean sciences and engineering, nuclear physics, plasma physics, and underwater sound reference division. All other divisions are under the direction of a Navy Captain, the Director of Support Services. The Laboratory's Director is Capt. James C. Matheson, USN, who reports to the Chief of Naval Research, Rear Admiral T. B. Owen, USN. A total of 3,300 employees work at the Laboratory, approximately 1,130 of whom are scientific and technical personnel.

As the Laboratory's research program has expanded and embraced more fields of interest and research, the library has likewise grown in collection, staff, and services and has endeavored to keep up with the so-called explosion of scientific literature.

At present, our floor area is 20,000 square feet, and we have a staff of forty, fifteen of whom are professional librarians. Organizationally the library is divided into three sections: the library services section with a collection of 113,000 books and bound journals and responsibility for all operations involved with acquiring and servicing the open literature; the document section which has a collection of 350,000 government research reports (one-third of which are classified); and a bibliography section which is responsible for the preparation of serial bibliographies and the library's current awareness tools. The pattern of interlibrary loan has completely reversed itself and we now lend twice as much material as we borrow. We subscribe to 1,800 technical journals, approximately one-third of which are foreign.

In 1964, the library started an automation program which would relieve the staff of many of its clerical operations and ultimately expedite and improve services to our patrons. We have a computer-produced journal holdings list for the main library and a comparable list for our branch library at the Office of Naval Research. Other operations now machine controlled are renewal of journals, distribution of NRL reports and the library's current awareness tools, circulation of books and journals, overdue notices, and inventory of secret documents. Programs at various stages of completion are subject authority lists for books and documents and an automated order procedure for reports on microfiche from the Defense Documentation Center. Long-range plans include a book catalog in three parts: author, subject, and title; an anticipation file for journal check-in procedures; and acquisition and cataloging of books. The Naval Research Laboratory has a large-scale computer which lends itself to the operation of an information retrieval system and a selective dissemination of information program based on interest profiles of scientists at the Laboratory. Our long-range plans include the development of such a system.

The library has recently acquired a microfiche reader, a reader–printer and microfiche copying equipment. Additional readers will

Planning for the new library: left to right, Mrs. Doris P. Baster, deputy librarian; R. J. Zampell, chairman, Naval Research Laboratory's Building Program; LaVera A. Morgan, head librarian; and Dr. James E. Skipper, consultant for planning the proposed new library.

be located in strategic locations in the Laboratory for convenient use by our patrons. By the end of 1967 research reports acquired and circulated to our patrons will be on microfiche rather than hard copy. The reader–printer located in the library will convert the microfiche to hard copy when required. The advantages of this system will be to get reports to our users more quickly, save staff time now required to charge and discharge material, and eventually help solve the space problem. Seventy-five per cent of our report acquisitions will be on microfiche.

The Laboratory has a building program to replace out-moded and inadequate facilities with new buildings. Included in the program are plans for a new library building of 65,000 square feet, providing for fifteen years growth. During the past four years, the librarian has visited twenty-four newly erected libraries and has complete dossiers on each library visited showing good features as well as major mistakes and pitfalls to avoid. To assist the librarian in estimating required space for all operations and service areas, our shop people built a model table representing 65,000 square feet and library furniture to scale. Several plans have been set up and photographed for comparative purposes in reaching a final decision for floor plan and functional arrangement. A formal program of requirements has been written by the librarian and evaluated by a consultant who was employed to work with her in formulating requirements. It is hoped that construction will start in the early seventies with occupancy one year later.

Our dream for the future is to occupy a new building, complete our program of mechanizing clerical functions, have an active microfiche program, and develop an information retrieval and selective dissemination of information program compatible with other systems in the country, so that we can hook up with them and have quick access to all scientific information in the disciplines our research program embraces.

LAVERA A. MORGAN, Librarian
Naval Research Laboratory
Washington, D. C.

Second IATUL Seminar Held in Delft

THIS IS a report on the second annual Seminar on International Library Methods and Techniques sponsored by the International Association of Technological University Libraries. The Seminar was held in Delft, the Netherlands, September 4-9, 1967.

Twenty-two librarians and thirteen lecturers representing fifteen countries and three continents assembled in the beautiful modern library of the Technical University of Delft to discuss ways and means to improve the dissemination of information throughout the world.

Gordon Williams, director of the Center of Research Libraries, which is the successor of the Midwest Interlibrary Center, described the purposes and activities of his organization. The Center was established by ten large university libraries for the purpose of acquiring and housing infrequently used library materials. Mr. Williams pointed out that it costs 15 cents per year to house a volume; thus, participating libraries save a lot of money by sending their infrequently used volumes to the Center. The Center keeps only one copy of each item and lends whatever it has, with the exception of too fragile materials. The Center also acquires seldom used material and has, for example, a collection of foreign dissertations which at present includes 600,000 titles.

Mr. Williams urged librarians to reverse their present policy of spending great amounts of money for anticipated needs, and concentrate instead on existing needs by buying enough copies for adequate service. The result of the present policy is that a patron has only a 45 per cent chance of getting a book even when the library possesses the book. Often his chances of getting it are better if the library must borrow it from another library. Mr. Williams considers the speed of access less important than the possibility of access. Libraries should be so organized that they can provide whatever a patron needs within a very short time. They should have bibliographic access to the world's literature, which can include teletype access to a great bibliographic center, and access to the literature itself through interlibrary loan.

The Center is maintained by 1.5 per cent contributions of the library budget of its members. Five thousand dollars is the smallest and seventeen thousand the largest contribution. At present the Center has twenty-seven members and two and a half million volumes; it expects to expand to seventy members and seven and a half million volumes within two or three years.

While Mr. Williams described a successful venture in library cooperation between comparatively few libraries located within a reasonable distance from each other, G. A. Hamel, director of the European Translation Centre (ETC) reported on a highly successful example of cooperation on an international scale.

The idea for the foundation of ETC in 1960 originated in the United States, and its growth was stimulated by close cooperation with the Clearinghouse for Federal Scientific and Technical Information and with the Translations Center of Special Libraries Association in Chicago. To facilitate a close cooperation ETC has adopted the descriptive cataloging system and the rules for transliteration used in these two translations centers of the United States.

At present ETC concentrates its interest on translations in the fields of natural science and technology from Slavic into Western languages. This might eventually change to embrace the social sciences too. ETC is an information center for and a provider of translations. It also has a list of translators.

ETC is located in the excellently equipped Technical University of Delft; this fact contributes greatly to its success, since the wealth of the library provides the Centre with the bibliographic tools which it needs for its work, and with the technical facilities which make fast service possible. National translations centers collect translations from all sources, government, industrial and private, in their respective countries and relay this information to ETC which maintains a card file of all translations which come to its attention. At present ETC has access through its files to 600,000 translations, and possesses 115,000 in film strips housed in little square boxes, or in microfiche. About seventy thousand titles are added to the card file yearly

and some twenty thousand items are acquired either through purchase, gift, or exchange. Fourteen West European countries, the United States, Canada, and Israel are at present members of the Centre which is financed by a 70 per cent contribution from the Dutch government. The remaining 30 per cent are borne by the members.

Discussions with the All-Union Institute for Scientific and Technical Information of U.S.S.R. are under way to establish whether an exchange of Chinese and Japanese translations into Russian made at the Institute would be a worthwhile undertaking. The Centre traces translations without charge and makes photocopies at cost. Since 1967 it publishes *World Index of Scientific Translations,* a quarterly checklist of periodical articles with annual cumulations.

Dr. H. Beutler, director of the European office of AUPELF (Association des universités partiellement ou entièrement de langue française) described the activities of his institution which links approximately fifty to sixty universities all over the world which use the French language. The Institute developed a cheap microfilm and microfiche reader, which soon will be on the market and which will make it possible even to the poorest university to acquire micro copies of library materials from AUPELF for its patrons. In the discussion Dr. Beutler admitted that the development of the Murayscope (the trade name of the new reader) was not an objective necessity since other good and cheap readers were on the market, but national pride insisted on a French reader.

Peter Brown, Keeper of Catalogues of the Bodleian Library, regretted the fact that "shared cataloging" at present was a wholly one-way road which benefits chiefly the Library of Congress but not English libraries; he expressed the hope that this situation might change when MARC becomes operational.

A. L. van Wesemael from the Library of the University of Utrecht, a delegate of ICCP (International Conference on Cataloging Principles) gave a brief report about the Paris Conference of 1961. He spoke about the difficulties in adjusting the different cataloging traditions to a single set of rules and seemed rather disconcerted about the acceptance of the "corporate author" entry; he foresaw difficulties in introducing successfully this type of entry, which is foreign to catalogers abroad, and which lends itself to so many different interpretations.

The discussion disclosed widespread scepticism about the wisdom of accepting the corporate author entry. It is regrettable that, thanks to American pressure, European catalogers are forced to introduce a cataloging principle whose value is highly debatable—to say the least—and which created far more problems in cataloging than it solved.

L. L. Ardern, deputy librarian of the University of Strathclyde, discovered in 1935 that the first microphotograph in the world was produced in Manchester a few hundred yards from the Manchester Central Library where he worked. This aroused his interest in reprography and he followed its development closely. Mr. Ardern predicted that the Caps-Jefree MIDAS (micro-imaged data addition system) which was invented in the United Kingdom will lead to paperless offices and will revolutionize library techniques. The machine costs 6,000 pounds and can record at intervals of days if necessary up to seventy-two documents on a 4 x 6 microfiche. When this technique is perfected scholars will be able to build their own microfiche libraries and keep them up to date by adding new information to a fiche whenever necessary. Mr. Ardern wondered what happened to a similar machine which was field-tested in John Crerar Library successfully eighteen months ago but of which nothing was heard anymore.

Mr. Ardern recommended the purchase of Hawken's *Copying Method Manual* as the best book on reprography, and the *Newsletter* from Hatfield College which evaluates all new microcopying and reading devices. By becoming a member of the National Reprographic Centre for Documentation (annual dues eight pounds) one receives all their publications free (address: The Secretary, NRC, Hatfield College of Technology, College Lane, Hatfield, Herts., Great Britain). One hundred shillings will buy the *Newsletter* without membership. Mr. Ardern also recommended the purchase of the *International Directory of Micrographic Equipment* 1967 by Jack Rubin (International Micrographic Congress, 13388 Hammons Ave., Saratoga, California) and a subscrip-

tion to *National Micro-News* (official journal of the National Microfilm Association, Office of Publication, P.O. Box 386 Annapolis, Maryland 21404) as being important for all libraries.

Mr. Ardern sees no signs of a "settling down." Newer and newer machines are being introduced, often very little different from each other. He recommended the promotion of the use of microfiche at reductions 15 to 20x plus "add-on" facility; the publication of important big works at high reductions; and the promotion of facsimile transmission. He also suggested the introduction of one standard order form among libraries, free exchange of microcopies, or at least yearly accounting among libraries which do much business with each other.

Dr. van der Wolk, director of the Delft Technological University Library, was responsible for the organization of the Seminar. He urged us to apply modern techniques within the library and to have teletype connections with all other libraries. An international network of teletype communications should be used for interlibrary loans, reference service, and all other communications from library to library. The Delft Technological Library is connected by teletype with Washington, Japan, and, of course, with all major libraries of Europe. The Library in Delft maintains a complete photographic and printing establishment and is capable of filling any library request on microfiche.

Dr. van der Wolk suggested that complete photographic and reprographic equipment and connection to the international teletype network should be a part of every library's equipment today. The *Telecode* and the *International Telex Directory* can be purchased from IATUL (13 Vine Court Road, Sevenoaks, Kent, England for two pounds, two shillings). Dr. van der Wolk considers teletype communication the most efficient and cheapest way of communication even within an institution. The average cost per outgoing message for the Delft Library is about ten cents. Although the cost varies from country to country, teletype saves so much time and labor that it should pay for itself in any country. Delft handles approximately eighty requests daily.

Dr. van der Wolk invented and introduced in his library an ingenious circulation system called Bibliophonesystem. The patron dials the booknumber on a phone. Lights appear in the stacks which lead the stack assistant to the book. He drops the book in a "sparachute," in which the book spirals down. If the book is not available a minus sign will appear on the telephone board.

Union lists are a prerequisite for efficient national and international library service. Mr. T. Nielsen, chief of the Copenhagen University Library, and an expert on union lists, called our attention to the great difficulties which the organization of union lists on a grand scale encounters. Even the decision whether to make classified lists or author lists is wrought with great difficulties. He hopes that the computer will solve some of the problems.

Mrs. Hillboe from the Swedish Patent Office gave a witty and informative speech on the intricacies of patent literature, the gist of which was that one has to work with patents to learn about them. She gave us a valuable short bibliography of the most important sources of patent literature.

K. H. Roberts, programme specialist of the newly organized Department of Libraries, Documentation and Archives, UNESCO, Paris, elucidated the complicated organization of UNESCO. With a budget of $61,000,000, UNESCO tries to help 120 nations to introduce or improve library services. The lack of qualified librarians in many countries makes the training of librarians a very important activity of UNESCO.

Library services must be planned with special regard for the conditions in each particular country. The division will try to prove that there is a direct relationship between the availability of library service and economic growth and development. He recommended the March-April 1967 issue of UNESCO's *Library Bulletin* which contains an article by C. V. Penna on "Planning Library Services," and Paul Avicenne's *Les Services Bibliographiques dans le Monde, 1960-1964,* which is due for publication this year.

A. Thompson, Secretary of IFLA, linguist and experienced librarian, author of *Library Buildings of Britain and Europe,* Butterworth, 1963, spoke about the ways by which to acquire expertise in library buildings. He deplored the fact that library literature on buildings is seldom evaluative,

and that indexing periodicals offer only a bewildering array of bibliographical references.

He recommended Metcalf's *Planning Academic and Research Libraries* as a wonderfully detailed classic which unfortunately lacks illustrations and Ellsworth's *Planning of College and University Libraries* as an excellent book which deals with the process of planning.

Only constant collaboration between a knowledgeable librarian and an experienced architect can assure a successful building. According to Mr. Thompson the new library of St. Louis University has developed the modern tendency of open shelves to a science.

IFLA maintains a list of experts on library buildings in different countries. This list can be obtained from Mr. Jean Belton (c/o Secretariat of IFLA). *Architecture d'Aujourdhui* devoted its December 1966/January 1967 issue to new library buildings. Volumes 13, 1963, no. 1 and vol. 15, 1965, of *Libri* contain important articles on library buildings.

C. van Dijk, a Dutchman with very varied library experience and chairman of ISO/TC 46, stressed the importance of standardization and the necessity for librarians to keep abreast of developments in this field. Each library should possess a complete set of international standards, should participate in formulating standards, and should use them. At the Moscow Conference of ISO it was decided to study the feasibility of assigning a book number to each book in order to facilitate indentification, purchase, and cataloging.

No library conference today would be complete without a discussion of system analysis and automation. Mr. L. M. C. J. Sicking, head of the Library and Documentation Department of the Netherlands Automatic Information Processing Research Centre in Amsterdam (Stadhouderslaan 6), provided us with a short state-of-the-art review; the gist of it was that automation of library management is a necessity due to the shortage of labor. Automation of content retrieval is still very far off; the KWIC Index cannot be accepted as a true retrieval system since it is too superficial for that. Mr. Sicking recommended the latest edition of Aslib's *Handbook of Special Librarianship* as very informative in the field of automation. A little booklet *The Inside of Books,* which Mr. Sicking gave us, gives insight into the work of the Centre and explains its success. The library on automatic information processing was started in 1959 with six books; today it is the largest library on automation in Western Europe. It disseminates knowledge on automatic information processing through research and publications, through instruction, biblicgraphies, and a card file which contains abstracts of books and periodical articles filed according to a classification system developed by the Centre. In cooperation with other libraries it publishes the monthly periodical *Literature on Automation* which abstracts in three languages all the worthwhile literature in the field.

Mr. Bagley, from Hatfield College of Technology, spoke on "Organizatcn and Management." He reorganized the library of Hatfield College by employing system analysis. Since the cost-benefit ratio is not the decisive factor in library service it would be hazardous to employ an organization and management expert who is accustomed to use cost-benefit ratio as a measuring rod of efficiency. Therefore, it is important that either the librarian himself learn system analysis or have one member of his staff trained for O and M. A great library should be organized along scientific lines.

Each lecturer provided us with valuable descriptive material and with the most important bibliographies for the topic of his lecture. Each speech was followed by a lively discussion which usually continued during lunch, which we took as a group either in the Library or in a nearby restaurant.

Our Dutch hosts went out of their way to make our stay not only intellectually rewarding but also as agreeable as human warmth, courtesy and meticulous attendance to our physical comfort could make it.

It was evident in this Seminar that for better or for worse, American librarianship exercises a strong influence on librarianship throughout the world; but it was also evident that there is much that we could learn from Europe.

MARGIT KRAFT, Head
Science Library of Paul Klapper Library
Queens College of the City University of
New York

Have You Heard . . .

Four SLAers Named to ALA Advisory Committee

A number of outstanding educators, librarians, and other professional leaders, including four members of SLA, have been named to serve as an Advisory Committee to the American Library Association's Office for Library Education. SLAers are Lester E. Asheim, ALA staff liaison; Verner W. Clapp, formerly president of the Council on Library Resources; Dr. Jean Lowrie, head, Department of Librarianship, School of Graduate Studies, Western Michigan University and Raynard C. Swank, dean of the School of Librarianship, University of California at Berkeley. The Committee replaces the Commission on National Planning for Library Education, which reassesses the needs of American libraries and makes recommendations appropriate to these needs for the selection, education; utilization of library personnel.

Medical Research Library of Brooklyn

The three-thousand-volume Medical Research Library of Brooklyn, New York, the country's fifth largest medical library, was dedicated at the State University of New York Downstate Medical Center in Brooklyn, November 7. The Library, which combines one of the oldest collections in the United States with one of the latest computer library information systems, resulted from the merger of two Brooklyn medical institution libraries, the Academy of Medicine of Brooklyn and the Downstate Medical Center. It becomes the third largest medical school library in the country. Actual transfer to Downstate of the Academy's collection of books, monographs, and periodicals, valued at $2,500,000, started in 1965 and is expected to continue through the 1967-68 academic year, according to Mrs. Helen Kovacs, director of libraries at Downstate and a member of SLA. Also taking part in the ceremony were SLAers Scott Adams, deputy-director of the National Library of Medicine in Bethesda, Maryland, who is President of the Medical Library Association, and Wesley Draper, Academy librarian at Downstate. The Library will offer a combination of fine, old medical books, including a rare tract, *The English Physician,* printed in 1707, and the convenience of computerized library information service. Three local Brooklyn hospital libraries will have access to this facility through terminals located in their buildings.

On-the-job Training Courses

The U.S. Office of Education (USOE) has selected System Development Corporation (SDC) to design a series of on-the-job training courses to improve the working skills of library personnel. The training program will be designed to better prepare library personnel in all types of libraries effectively to meet the increasing demands on library services. The $184,673 project, supported by USOE and the U.S. Army Corps of Engineers, calls for design and development of a series of training courses to be conducted over a twenty-month period.

Library Binding Institute Scholarship Award

The Library Binding Institute is now accepting applications for its $1,000 scholarship award for 1968, which is administered by the Library Education Division of ALA. Eligible are graduates, undergraduates, and librarians, who are engaged in work in a special area of research through a library school. Applications must be received by January 15. For an application form write to: Frederic J. O'Hara, Chairman, Scholarship and Awards Committee, ALA Library Education Division, Graduate Library School, Long Island University, P.O. Greenvale, Long Island, N. Y. 11548.

Cal Fellowships and Assistantships

The University of California at Berkeley School of Librarianship and Institute of Library Research has announced the following fellowships and research assistantships for 1968-69: Study leading to the PH.D. or D.L.S. degrees; Higher Education Act Fellowships; two University Fellowships; eight Research Assistantships. For study leading to M.L.S. degree: Higher Education Act Fellowships; one Scholarship; and nine Research Assist-

antships. These awards range from $600 to $5,000. Interested applicants should write to the Dean, School of Librarianship, University of California, Berkeley, California 94720.

GRANTS

Council on Library Resources Grants Four

Recipients of recent Council on Library Resources grants include: THE AMERICAN LIBRARY ASSOCIATION'S newly-established Information Science and Automation Division (ISA) which, as the result of the $21,009 grant, will begin publication of a quarterly *Journal of Information Science and Library Automation.* The Council will assist publication of the journal for the first three years. No date has been set for the start of publication. The journal, limited to substantive materials, is planned to allow librarians to look at the literature as a whole, and to encourage a systems approach to automation. It will be available to nonmembers of the ISA Division on a subscription basis. THE LIBRARY OF CONGRESS received a $2,000 grant for duplication of two machine-readable files of cataloging information, to enable sale and distribution of either on magnetic tapes. The first file presently being made available is a 1,200-foot sample magnetic tape containing cataloging records from the Library's MARC 9 Machine-Readable Cataloging format. The second file to be made available consists of a set of three magnetic tapes, 2,400 feet each, used to print the seventh edition of the *List of Subject Headings Used in the Dictionary Catalogs of the Library of Congress.* THE SCHOOL OF LIBRARIANSHIP AND ARCHIVES, University College, London, England, received a $7,000 grant from CLR for the preparation of a catalog for library materials in Hindi, which has yet to be established in India or elsewhere today. This project will benefit not only Indian libraries, but several large libraries in the United States, Canada, and England, that have major collections in Hindi and related languages. A $1,000 grant to THE SOCIETY OF AMERICAN ARCHIVISTS will assist in the publication of a volume of professional papers on archives and record center buildings and equipment. The selected papers relate to the programming, planning, and functional equipment of archives and record center buildings built in the United States during the period 1935-65.

INDIANA STATE LIBRARY has granted $30,000 to support a research project to test the feasibility of applying SDI (Selective Dissemination of Information) to small public libraries. Charles H. Davis and Peter Hiatt of Indiana University will establish reader interest profiles based on the Dewey Classification scheme. These profiles will serve as the basis for search logic to be used in conjunction with a computer program.

THE NATIONAL AGRICULTURAL LIBRARY has announced a grant of $134,996 to the University of Pittsburgh on behalf of the Interuniversity Communications Council (EDUCOM) for the support of research entitled "National Agricultural Library-Land Grant Institution Information Network."

COMING EVENTS

THE THIRD LIBRARY HISTORY SEMINAR will be held February 8-10 at Florida State University, Tallahassee. It is jointly sponsored by Florida State University's Library School, History Department, and Strozier Library, and by the *Journal of Library History* and the American Library History Round Table. Registration fee for the Seminar is $12, including a banquet. Four travel scholarships will be granted to qualified students. Papers are invited on the subjects of Library Beginnings, Library Media, Library Relationships. For reservations, applications for student scholarships and further information write Third Library History Seminar, Library School, Florida State University, Tallahassee, Florida 32306.

THE DREXEL INSTITUTE OF TECHNOLOGY GRADUATE SCHOOL OF LIBRARY SCIENCE CONFERENCE WORKSHOP AND SPECIAL COURSES schedule for 1967-68 includes: Data Processing in School Libraries Conference at the Sheraton Hotel, Philadelphia, March 28-30; Seminar in Academic Library Administration (place undecided), May 13-17; Church and Synagogue Library Association Conference at the Bellevue-Stratford Hotel, May 27-29; Eighth Annual School Librarianship Workshop: Library Materials in Science, Bellevue-Stratford Hotel, July 7-19; Regional Workshop on Performing Arts Librarianship, Warwick Hotel, Septem-

ber 19-20; Fifth Seminar in Synagogue Librarianship, Drexel Campus, October 1-November 5; Institute on Hospital Librarianship (place undecided), October 21-25. For further information contact Margaret Warrington, Administrative Assistant, at the School, Philadelphia, Pennsylvania 19104.

THE HOSPITAL LIBRARIANS' SECTION OF THE ASSOCIATION OF WESTERN HOSPITALS will hold its annual convention in Portland, Oregon, in April 1968. Portland librarians and others interested in the promotion of hospital libraries are invited to attend the planning meeting on behalf of the officers of the Hospital Librarians' Section. The meeting is tentatively set for Monday, April 22.

THE UNIVERSITY OF MARYLAND LIBRARY ADMINISTRATORS' SECOND ANNUAL DEVELOPMENT PROGRAM will be held on August 11-23, 1968, at the University's Donaldson Brown Center, Port Deposit, Maryland. Participants will include senior administrative personnel of large public, research, and academic libraries and school library systems. Under the direction of Dr. John Rizzo of the School of Government and Business Administration, George Washington University, the seminar session will concentrate upon the principal administrative issues which face senior managers in library organizations. Further information can be had from the Library Administrator's Development Program, School of Library and Information Services, University of Maryland, College Park, Maryland 20742.

The 1968 NATIONAL MICROFILM ASSOCIATION CONVENTION will be held at the Conrad Hilton Hotel, Chicago, Illinois, May 21-23, 1968. Write to Louis J. Zeh, Jr., Program Chairman, 1968 NMA Convention, Xerox/University Microfilms, P.O. Box 1346, Ann Arbor, Michigan 48106, for further information.

MEMBERS IN THE NEWS

HAROLD BLOOMQUIST of the Harvard Medical Library has taken on an additional responsibility as acting librarian of the Francis A. Countway Library (Harvard).

ALFREDA BURROWS has been appointed assistant to Agnes Hanson (also an SLAer), head of the Business Information Department of the Cleveland Public Library.

JAMES L. CRAIG of the Yale University staff was recently promoted from assistant to the university librarian and associate university librarian to the position of assistant head, Catalogue Department, University Library. In this capacity, Mr. Craig will assist in problems of administration, management, recruitment and introduction of computer-based cataloging procedures with first emphasis on the sciences.

AGNES CRAWFORD, head, U.S. Army Library Service, Washington, D. C., was a member of a survey team which toured U.S. Army library installations in Europe, November 20-December 9. The tour, which was requested by the European Theatre, was made principally in Germany, Austria, and Italy. The survey included the present state of development of the library installations, for the purpose of making recommendations for improvement of existing facilities.

KEITH DOMS, director of Carnegie Library of Pittsburgh, has been elected president of the newly incorporated Pittsburgh Regional Library Center, an organization of Pittsburgh area academic and research libraries. Other officers of PRLC who are members of SLA are: Kenneth Fagerhaugh, Carnegie-Mellon, vice president; Eleanor McCann, Duquesne University, and Dr. C. Walter Stone, University of Pittsburgh, both of whom are members of the executive council of PRLC.

DAVID G. DONOVAN has been appointed project officer of the International Relations Office of the American Library Association. Mr. Donovan was previously field director of the Library of Congress in Pakistan, where he served since 1965. In his new position, he will work with the U.S. Agency for International Development and other government agencies in Washington, D. C.

HELEN FOCKE, professor of the School of Library Science of Case Western Reserve University, has been elected to emeritus rank by the University's trustees. Miss Focke, a native Clevelander, holds an A.B. degree from the Flora Stone Mather College (Cleveland) and an M.A. and B.S. in library science from WRU. Before joining the WRU faculty as associate professor, she was supervising li-

brarian at Case, then the Case School of Applied Science.

MARJORIE R. HYSLOP has been chosen to fill the new post of director of metals information for American Society for Metals, Metals Park, Ohio. Mrs. Hyslop had served as associate director of documentation. She joined the society upon graduation from Ohio State University, where she majored in metallurgy, in 1930. She has been editor of *Review of Metal Literature* since its inception in 1944, and continues in this capacity. In her new post, Mrs. Hyslop will be responsible for the abstracting and indexing of technical information in the metals field.

JUDITH F. KRUG has been named director, Office for Intellectual Freedom of the American Library Association. Mrs. Krug, who has been research analyst with ALA's Office for Research and Development since 1965, will begin her new duties on December 1. She is a graduate of the University of Pittsburgh and earned her master's degree in library science from the University of Chicago. She has done graduate work in political science at both universities.

MARGARET M. LAWLOR, former librarian of the Jackson County Medical Library, and more recently director of the Research Hospital and Medical Center Libraries, Kansas City, Missouri, is now librarian of St. Margaret's Hospital School of Nursing Library, Kansas City. Miss Lawlor has been a member of SLA since 1948.

LAWRENCE E. LEONARD, project director for the Colorado academic libraries book processing center feasibility study, was recently elected vice president and president-elect of the Colorado Library Association. Mr. Leonard joined the University library staff earlier this year, having previously been with the National Bureau of Standards.

MARY A. MCNIERNEY has been appointed supervisor in charge of General Motors public relations research and libraries in New York and Detroit, Michigan. Miss McNierney joined GM after seven years with Bache and Company, where she was chief librarian, and four years with Standard and Poor's Corporation as reference librarian. A native of Newark, New Jersey, she received her M.L.S. degree from Columbia University.

ROBERT S. TANNEHILL, JR., has accepted the new position of information scientist at the Vanderbilt University Medical Center Library, Nashville, Tennessee. Mr. Tannehill completed the basic requirements for an M.S. degree in information science at Drexel Institute of Technology, Philadelphia, and holds a B.A. in chemistry from the University of Southern Mississippi. He will work as a system designer and analyst.

MARY B. YOUNG has been appointed chief, Technical Information Branch, Army Materials and Mechanics Research Center, Watertown, Massachusetts. Prior to this appointment, Miss Young worked as librarian, Documents Section, Air Force Cambridge Research Laboratories, Hanscom Field, Bedford, Massachusetts.

Elaine Harris Joins SLA Staff

ELAINE C. HARRIS became Publications and Public Relations Assistant of SLA on October 23. Miss Harris will assist Guy R. Bell, Director, with *Special Libraries,* advertising, public relations, and publicity. Her background is in creative and editorial writing, public relations, publicity and advertising. Most recently, she was responsible in these areas for the Lighthouse, the New York Association for the Blind. Prior to that she assumed similar duties at Clairol, Incorporated. Miss Harris was educated in Massachusetts and Mount Vernon, New York. She attended both Hunter College and City College of New York, majoring in advertising and minoring in English. She is a Certified Volunteer Braille Transcriber for the Library of Congress. Her major interests include the fine arts and music. A student of classical ballet, Miss Harris resides in Manhattan.

Off the Press . . .

BOOK REVIEWS

ASHWORTH, Wilfred, ed. *Handbook of Special Librarianship and Information Work,* Third Edition. Aslib, London, 1967. 624 p.

We are bound to agree with the reviewers of the first (1955) and second (1962) editions of this *Handbook* as to its intrinsic value. This value is enhanced by the scarcity of comprehensive systematic works in the special library field. What is there besides the work under review and Strauss?* If the definition of a "profession" includes the requirement of a body of professional literature—as some insist—we may have a difficult time proving our claims.

The new edition has retained the basic quality that would make it stand out even among many competitors: it goes beyond the mere presentation of techniques and explains leading principles, without shying away from taking a stand on controversial issues. This is particularly evident in the newly added chapter on "Information retrieval." This chapter, by the way, supersedes the one on "Cataloguing and indexing," and includes the material formerly found there, treating these subjects as a phase of data input. The why and wherefore of this change in the arrangement is not explained and has remained a mystery to us. On the other hand, the discussion of "Mechanical aids in library work" is some three hundred pages removed from that of information retrieval even though it includes such subheadings as "Mechanical retrieval and indexing systems," "Selective dissemination of information," and others of a like nature. We suggest a reorganization of the matter of these two chapters for the next edition, which we expect no later than 1970—due to the rapid development in the field as well as to the general excellence of the book.

At the same time, it is only fair to say that each one of the well coordinated chapters may be considered a monograph that is complete in itself and may be perused to advantage independently of the rest of the book: e.g. few reference librarians—even experienced ones—will fail to benefit from studying C. W. Hanson's "Subject inquiries and literature searching."

The addition of a new chapter on "Report literature" fills a definite need. Here, as throughout the book, the requirements of the American reader are taken into the fullest possible consideration, but the fact remains that all his particular pragmatic needs cannot be satisfied without overtaxing the confines of one volume. Despite that stricture, we consider the book indispensable for all but the smallest special libraries; the bibliographies appended to each chapter are, by themselves, worth the price of admission.

DR. KARL A. BAER, Chief Librarian
National Housing Center
Washington, D. C.

Pandex. New York: Pandex, Inc., 135 West 50th Street. (Yearly subscription $460, $390 for educational institutions.)

Pan, a word element or prefix taken from the Greek and meaning "all" and the letters -dex taken from the word index, are used to form the acronym-name of this new index. As the name implies this is a "pan" or all inclusive index, since it covers the fields of science, technology, and medicine. To do this enormous task, all the articles from approximately two thousand key periodicals covering the above fields are indexed. I have been told that this basic list will continue to be expanded. The coverage of the literature begins with calendar year 1967. The index is issued quarterly, with the fourth or final quarter of the year serving as the cumulated annual index. *Pandex* claims that its annual cumulation is only a few inches thick, and this is so, since it is produced on standard 4 x 6 inch microfiche. Users of this index for the first quarter of the year may have been disappointed with the quality of the microfiche. It had a curvature which often required the user to refocus; and it was a negative print. This problem has been corrected, however, since the quality of the microfiche I received for the second quarter is excellent; and it is a positive print.

The arrangement of the index on the fiche allows easy usage. Each fiche has twenty-seven columns of index entries, and each column has a "header" term on the top line. Searching is reduced to a simple procedure; the searcher simply scans the header terms at the tops of the columns, then proceeds vertically down the desired column. The index itself is issued in two parts, a subject index and an author index. The author index contains entries for all secondary as well as primary authors. All au-

* *Scientific and Technical Libraries; their organization and administration,* by Lucille J. Strauss and others. Interscience Publishers, New York, 1964.

thor names are printed in upper-case letters to aid scanning. A main author entry provides the following information: all secondary authors, title, journal coden, volume number, issue (if a weekly), and starting page. A secondary author entry provides a cross reference to the main author. The title and other possible secondary authors are omitted. This omission of the title, however, still allows the user to go directly to the shelves after consulting a secondary author entry since the journal title and article paging are given.

Entries in the subject index provide the following bibliographic information: full title, primary author only, journal coden, volume, issue (if a weekly), and starting page. A full title in context is provided, but several interesting space saving devices have been used. Shortening of the title is achieved by omitting the word "the," and by using the ampersand sign (&) for the word "and." In addition, the word endings "-tion" and "-tions" are shortened to -tn and -tns respectively. The user will soon find, however, that these shortening devices do not impair the legibility of the title. Another space saving device has been used for reporting the periodical title. Periodical titles are given in ASTM coden form; a sheet with full titles for the journal coden is provided with the index. Since secondary authors are not provided in the subject index, people citing from the index should use the main author entries in the author index, where complete bibliographic information is given.

The "subject words," in upper case for rapid scanning, are found at or near the edge of the left-hand margin of the index column. In using the index one simply scans down the column through the subject words as in a KWIC-type index. To aid in the scanning process very often secondary words are also emphasized. When a meaningful secondary word follows the subject word, it is printed in upper case letters. Occasionally, a meaningful secondary word preceding the subject word is printed in upper case letters. This use of secondary words to the left and right of the subject word gives added depth to the subject word while one is scanning.

The subject index is a hybrid between a KWIC-type index and a manually produced index employing subject headings. Both a computer and humans were used in the indexing process. This marriage of the computer and the human indexer has produced an interesting and distinctive indexing scheme. Each new subject in the index is indicated by broken lines which flank a subject word (in upper case) in the centre of the index column. This "subject word" which may, or may not, be found in the titles of the articles indexed serves as the subject word most useful in describing the concept common to all the articles listed below it. For instance, the word "cow" might be found as a subject word. Beneath this subject word entries would be found which might or might not have the word cow in the title. Entries not having cow in the title would still be found here, however, since they might have used conceptually related words such as cattle or bovine in the title. True synonymous words are also found together. Thus, articles using tungsten or wolfram in the title are all found together in the section under tungsten, with a cross reference from wolfram.

Besides bringing together synonyms and words which are conceptually related, all grammatical forms of these words are treated as though they were synonymous, so they too are found together in one place. Therefore, all singular, plural, adjectival, adverbial, or noun forms of a subject word would be treated as being synonymous; and articles having these various forms of the word in their titles would be found under the same subject word. Even antithetical terms such as proton and antiproton, and sexual and asexual will be found together. This feature may or may not prove to be useful to the searcher. All these rules apply to foreign-language subject words as well, since they are found together with their English language counterparts. What a boon for people who have a limited facility with foreign languages! Ample cross references provide the syndetic apparatus for the index, by directing the searcher from synonyms and conceptually related terms to the authoritative subject word. Besides being time-saving devices, all the above features preclude the possibility of the user forgetting to look for useful subject words and assure him of a comprehensive search.

Most recently I received notification of a new service offered by Pandex which should be of interest to companies and institutions with SDI programs. Starting on November 15, Pandex magnetic tapes generated on an IBM 360 computer in either 7 or 9 track format, and in either BCDIC or EBCDIC configuration will be available on a weekly basis at a subscription rate of $4,000 a year. This cost will include search programs and full documentation.

Another notification has indicated the enlarging of the scope of Pandex in the new year. Plans are under way to add to the index all English-language books published in science technology, and medicine (approximately 6,000 titles a year). These books will be in-

dexed manually, and an average of eight to ten subject terms will be assigned to each title. The following bibliographic information will be supplied: author(s), title and subtitle, publisher, edition, pagination, LC card number, price, and indication if a paperback. This coverage of English language books will begin on January 1, 1968.

Pandex, an interdisciplinary index with very broad subject coverage, can serve to complement the large subject-oriented abstracting and indexing tools such as *Chemical Abstracts* or *Biological Abstracts.* It cannot, however, compete with the depth of these larger tools. If you are looking for a quick interdisciplinary approach to the whole range of scientific, technical, and medical periodical literature, then *Pandex* may be for you. To do this difficult job and still remain competitive in price ($460, $390 for educational institutions) a machine-produced index on microfiche had to be devised. While the use of microfiche as the media for the index may serve as a deterrent to purchase by some, it should not. Microfiche as a means of information transfer is daily gaining wider acceptance. Furthermore, ever improving technology in readers and reader–printers is proving microfiche to be a convenient as well as compact and economic form for the storage and retrieval of bibliographic information.

HAROLD A. SIROONIAN
Science Librarian
City College of the
City University of New York

Termination of Technical Translations Journal

Technical Translations, announcement journal published by the Clearinghouse for Federal Scientific and Technical Information, will be discontinued after December 1967 (Vol. 18, No. 12, dated December 30, 1967). Beginning in 1968, all U.S. Government-sponsored technical translations will be announced in the Clearinghouse announcement journal, *U.S. Government Research & Development Reports.* The first issue announcing these translations will be Vol. 68, No. 1, dated January 10, 1968. After December 30, translations not sponsored by U.S. Government agencies will not be announced by the Clearinghouse. These translations are now announced in both the *Translations Register-Index* published by SLA Translations Center, and in the *ETC Quarterly Index* published by the European Translations Centre. The Clearinghouse will continue to provide reference information and attempt to answer specific queries on all translations, both Government-sponsored and non-Government-sponsored.

The 3 R's Program Report

The 3 R's Program: Meeting Industry's Informational Needs, a report to the Division of Library Development, New York State Library, has been published by the Arthur D. Little consulting firm. Its purpose is to provide ideas and guidelines for strengthening the 3 R's program. Members of the Advisory Committee for this study were SLAers: Edward A. Chapman, librarian, Rensselaer Polytechnic Institute; Joseph P. Desmond, librarian, Cornell Aeronautical Laboratory; Elizabeth Ferguson, librarian, Institute of Life Insurance; Eugene B. Jackson, director, Information Retrieval & Library Services, IBM Corporation; Dr. Russell Shank, Smithsonian Institution, and Bill M. Woods, formerly executive director, SLA. The supply of this publication is limited and copies will be available to major research libraries. Requests for copies should be directed to: Program Standards and Materials Section, Division of Library Development, New York State Library, Albany, N. Y. 12224.

African Affairs

Greenwood Periodicals, Inc., New York, announces a new publication, *A Current Bibliography on African Affairs,* published for the African Bibliographic Center, Washington. The basic concept of the journal is to assist African study groups and scholars, educators and universities, specialists and students, private organizations and librarians with rapid, impartial and comprehensive coverage of published and forthcoming materials about Africa. Special features include an annotated book review section, commentary section; forthcoming publications section. It is said to be the only publication of its kind for area studies. Requests for subscriptions should be directed to: Greenwood Periodicals, Inc., 211 East 43rd Street, New York, N. Y. 10017. Cost is $20 per year for twelve issues. One dollar additional for foreign subscriptions. Single issues will be sold at $2.25.

New Edition of Biomedical Titles

The Suny Biomedical Communication Network announces the publication of the second edition of the *Suny Union List of Serials.* The one-thousand-page volume, ready for distribution December 4, contains entries for

more than 25,000 periodical titles which are held by the sixty libraries in the State University of New York. Also included is information about titles held by the libraries of the City University of New York, and other state libraries such as Roswell Park Memorial Institute in Buffalo and the State Medical Library in Albany. Entries are in direct title format. Information given includes the holdings statements, cross references from corporate bodies, and information tracing the history of a title which has changed its name. The titles cover all subjects with the exception of law. Copies are available at $25 each. Orders should be sent to the Upstate Medical Center, 766 Irving Avenue, Syracuse, New York 13210.

Technological Forecasting

A new scientific journal in the field of technological forecasting and the interrelation between the social and environmental conditions of new technological advances will be published by American Elsevier Publishing Company of New York. The new journal, which will begin publication in 1968, will be developed with leading editors from the areas of government, industry, and the academic world. Methodology of forecasting will be one concern of the new journal. Social and environmental changes resulting from these new technological advances will be explored in depth. For technical reasons English will be the primary language, although contributions in other languages will be considered. For further information about the new publication, write American Elsevier Publishing Company, Inc., 52 Vanderbilt Avenue, New York, N. Y. 10017.

Library Manpower

Library Manpower: Needs and Utilization, the proceedings of a special conference on library manpower held in Washington in the spring of 1966, is now available from the American Library Association. Edited by Dr. Lester Asheim, director, Office of Library Education, and an SLA member, the publication is a project of the Library Administration Division and the Office of Library Education. The purpose of the conference was to identify what is now being done about the problems of library manpower, what needs to be done, and who can do it. The proceedings include papers given at the conference; summaries of group discussion reports results, and lists of recommendations for action. Copies are available at $1.50 per copy from the ALA Publishing Department, 50 East Huron Street, Chicago, Illinois 60611.

New Electronics Abstracts Journal

Electronics Abstracts Journal, a new publication devoted to the theory, properties, and use of electronic devices and circuits, has been announced by Cambridge Communications, publishers of solid-state, computer, and electronics abstracts. Special features of the journal will include coverage of government research reports, conference proceedings, patents, books, and dissertations as well as the worldwide periodical literature; informative abstracts prepared, edited, classified and indexed by a trained staff of scientists and engineers; organization with extensive cross references, and subject, source and author indexes. Subscription and other information should be directed to Geoffrey Knight, Jr., President, Cambridge Communications Corp., 238 Main Street, Cambridge, Massachusetts 02142.

John Crerar Library Catalogs

Individual sections of the Classified Subject Catalog of the John Crerar Library, Chicago, will be published by the G. K. Hall Co. of Boston. Catalogs include: *Author-Title Catalog,* thirty-five volumes; Classified Subject Catalog (including *Subject Index*), forty-two volumes; *Subject Index to the Classified Subject Catalog,* one volume. Descriptive material on the catalogs, including prices and information on the thirty-four individual sections, is available on request to G. K. Hall & Co., 70 Lincoln Street, Boston, Massachusetts 02111.

SLA AUTHORS

ASHEIM, Lester. The View from ALA: The Office for Library Education. *D.C. Libraries,* vol. 38, no. 4, Fall 1967, p. 67-9.

HAGLE, Alfred D. The Large Print Revolution. *Library Journal,* vol. 92, no. 16, Sept. 15, 1967, p. 3008-10.

STERNBERG, Virginia A. et al. *A Bibliography on Heat Transfer and Fluid Mechanics Aspects of Nuclear Reactors.* 1st ed., 2 vols., Clearinghouse for Federal Scientific and Technical Information, National Bureau of Standards, U.S. Department of Commerce, Springfield, Va., 1967, printed or microfiche.

STRAIN, Paula M. Trails for Tomorrow. *Living Wilderness,* vol. 31, nos. 96-7, Spring & Summer, 1967, p. 55-9.

WALKER, William B. Another Part of the Iceberg: Art Library Resources at the Smithsonian Institution. *D.C. Libraries,* vol. 38, no. 4, Fall 1967, p. 70-5.

RECENT REFERENCES

Cataloging and Classification

THE UNIVERSITY OF CHICAGO PRESS. *Catalogue of Books and Journals, 1891-1965.* Chicago and London: The University of Chicago Press, 1967. xxxvi, 405 p. illus., tables. $6. (L.C. 66-13859)

This catalog offers a record of all books and journals that have appeared under the imprint of the University of Chicago Press. It contains a listing of titles, authors, and editors; bibliographic details of all books and series in print; title, author, and publication dates of out-of-print books; a subject listing; illustrations; and a historical introduction. Also includes a complete descriptive listing of scholarly periodicals which, from the beginning, have provided a channel for faster and more topical publishing than can be achieved in book form.

Dictionaries and Encyclopedias

BOORMAN, Howard L., and HOWARD, Richard C., eds. *Biographical Dictionary of Republican China, vol. 1: AI-CH'Ü.* New York (and London): Columbia University Press, 1967. xv, 485 p. map. $20. (L.C. 67-12006)

First volume of a projected five-volume series, sponsored by the School of International Affairs of Columbia University and supported by grants from the Ford Foundation.

CLASON, W. E., comp. *Dictionary of Metallurgy.* New York: American Elsevier Publishing Company, Inc. 1967. viii, 634 p. $25.

English/American (with definitions), French, Spanish, Italian, Dutch and German with 6714 entries. Provides cross-keyed alphabetical indexes for each of the languages included.

Encyclopedia of Auditing Techniques, 2 vols. Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1967. approx. 1,400 p. $39.95.

This encyclopedia deals with audits of a great variety of business activities and organizations: from doctor's office to department store, labor union to oil operator, two-man partnership to highly organized and publicly owned utility.

KLEIN, Bernard, and ICOLARI, Daniel, eds. *Reference Encyclopedia of the American Indian, with a Special Introduction by Robert L. Bennett.* New York: B. Klein and Company, 1967. 536 p. $15.

Provides listings of subject related museums, libraries, associations, government agencies; sources of visual and instructional aids, and authentic arts and crafts; reservations and tribal councils; monuments and state parks; government publications, newspapers, magazines and periodicals; Indian schools; related course offerings of U.S. colleges and universities; biographical sketches of living Indian and non-Indian notables in Indian affairs; and a 2,000-entry annotated, classified bibliography.

LANA, Gabriella, et al. *Glossary of Geographical Names.* New York: American Elsevier Publishing Company, Inc., 1967. viii, 184 p. $10.

5950 geographical names in English, French, Italian, Spanish, Dutch and German. The Glossary is the result of extensive research work by a team of trained professional interpreters and translators. The six languages are cross indexed in such a way that names of places, using any of the languages as a basis, can easily be located.

VOLLMER, Ernst. *Encyclopaedia for Hydraulics, Soils and Foundation Engineering.* New York: American Elsevier Publishing Company, Inc., 1967. 420 p. $18.

This encyclopaedia treats in detail the terms related to hydraulics, soils and foundation engineering. Subjects covered are; coastal and harbor engineering, river training and regulation, weirs and dams, hydropower plants, water supply and storage, and many others.

WILLIAMS, Neville, ed. *Chronology of the Modern World.* New York: David McKay Company, Inc., 1967. 923 p. $12.50.

A dictionary of significant events from 1763 through 1965 arranged by year and month and wherever possible by day of month. Is international in scope. On each left-hand page are cited the military and political events of the particular year, while the right-hand page lists events relating to the arts and sciences. The use of such a reference book to the librarian or research specialist, the copy editor, writer, student, teacher and broadcaster are at once apparent.

Directories

AMERICAN SOCIETY OF ASSOCIATION EXECUTIVES. *Encyclopedia of Meeting and Convention Speakers.* Washington, D. C.; 1967. 112 p. photos. pap. $5; $2.50 to members.

More than 400 speakers are listed in this first edition, dedicated to assisting the professional association executive in his selection of the finest speakers for his program, for conventions, seminars, and meetings of associations. Speakers have been recommended and used during the past year by members of the Society. The comment for each speaker is provided by the editorial staff and drawn from material in the files on the speaker. The final section of the book indexes the speakers in 38 broad subject areas. Members are urged to submit additional information and names of new speakers for inclusion in the next edition.

Directory of Manufacturers' Representatives (Agents), 6th ed. New York: Manufacturers' Agent Publishing Co., 1967. 219 p. $25.

Lists more than 15,000 manufacturers' domestic and export representatives in the United States, Canada and Puerto Rico. Listings are arranged geographically and include the principal products each "rep" carries and the trading area covered.

HUENEFELD, Irene Pennington. *International Directory of Historical Clothing.* Metuchen, N. J.: The Scarecrow Press, Inc., 1967. x, 175 p. $5. (L.C. 67-10186)

Lists authentic clothing of various periods and countries found in museums, art galleries, historical societies, libraries and churches, located in Canada, the United States, and Europe. It provides

a comprehensive reference on acquisitions of casual, formal, national and regional clothing; military, civil and professional uniforms; and ecclesiastical vestments.

STECKLER, Phyllis B., ed. *The Bowker Annual of Library and Book Trade Information.* 1967. Wyllis E. Wright, Consulting Editor, Sponsored by the Council of National Library Associations, 12th ed. New York: R. R. Bowker Company, 1967. 454 p. ills. tables. $10.25; outside U.S. and Canada $11.30. (L.C. 55-12434)

Yearly record of developments in the library and book trade fields. New in this edition are reports on library standards for service to the blind, the status of library statistics of national scope, and the new Federal Library Advisory groups. Also a survey of developments in intellectual freedom. Index.

The Standard Periodical Directory, 2d ed. New York: Oxbridge Publishing Company, Inc., 1967. 1024 p. $25, includes a semi-annual supplement.

Lists and describes 40,000 publications and classifies them under 200 major subject headings. Has an edge index for the convenience of users in locating both specific field of interest and the periodical titles in the index.

Information Handling Techniques

Computers in Higher Education: Report of the President's Science Advisory Committee. Washington, D. C.: The White House, 1967. vi, 79 p. illus., tables. pap. 30c. (Order from Superintendent of Documents, U.S. Government Printing Office)

The widespread use of computing in scholarship as well as industry and government has come about not because of a general enthusiasm for computers, but because this new tool has found vital and increasing use in each field in which it has been applied. Recommends that the Federal Government collect data concerning computers and the jobs, personnel, and educational facilities associated with them, making annual forecasts.

HERSEE, E. H. W. *A Simple Approach to Electronic Computers,* 2d ed. New York: Gordon & Breach, 1967. xi, 261 p. tables, figures. $7.50.

Not intended primarily for future mathematicians and engineers. It has endeavored to keep the treatment simple to be well within the grasp of anyone who is interested in modern advances and wants to know how a computer works. The additional material is largely confined to three chapters. Index.

HOUGHTON, Bernard, ed. *Information Work Today, Papers presented at a Symposium for Information Workers held at Liverpool School of Librarianship in September 1966.* Hamden, Conn.: Archon Books and London: Clive Bingley, 1967. 119 p. $4.50.

Symposium of papers delivered at a conference held in Liverpool in September 1966 for information workers in industry, with particular reference to newcomers in the field from other areas of industrial work or study. The short course which this book comprises will be relevant to library students planning careers in industry or in the commercial or technical departments of public libraries.

LECHT, Charles P. *The Programmer's ALGOL.* New York: McGraw-Hill Book Company, 1967. 252 p. illus. $8.95.

This highly detailed reference source on ALGOL is arranged alphabetically. Includes a directory which aids in identifying a particular form of statement or declaration as having been derived from one of the six statements and four declarations available within ALGOL. The Appendixes include a discussion of the concept of reserved identifiers, a list of mathematical functions available in most ALGOL compilers, a set of representative ALGOL programs derived from contributions to the Communications of the Association for Computing Machinery, and a glossary of terms.

PERRY, Robert H., ed. *Engineering Manual: a Practical Reference of Data and Methods in Architectural, Chemical, Civil, Electrical, Mechanical, and Nuclear Engineering,* 2d ed. (McGraw-Hill Handbook Series). New York: McGraw-Hill Book Company, 1967. 770 p. illus. $11.75.

Offers in one compact volume all of the essential working concepts, tables, formulas, and facts needed to answer the questions that arise in day-to-day engineering assigments. The manual brings together the needed facts, methods, procedures, and recently adopted techniques in the various branches of engineering. Index.

SELYE, Hans. *Symbolic Shorthand System.* (Rutgers Series on Systems for the Intellectual Organization of Information, Vol. VI, edited by Susan Artendi). New Brunswick, N. J.: Rutgers—The State University Graduate School of Library Service, 1966. 89 p. figures. pap. $3.50. (Available from Rutgers University Press)

This volume resulting from an investigation concerned with systems for the Intellectual Organization of Information, under a grant from the National Science Foundation. The presentation of the study was followed by a panel discussion with the audience participating. The points brought out in the discussion are incorporated in the volume. Symbolic Shorthand System should be considered as a system-language of our documentation service.

Professions, Medicine, Nursing, and Pharmacy. Library Science degree required; science library experience desired. Salary $6,660-$9,600. Usual fringe benefits. Send resume to Ted F. Srygley, Health Center Librarian, J. Hillis Miller Health Center Library, University of Florida, Gainesville, Florida 32603.

CATALOGERS (LC). Eleven college libraries in beautiful Finger Lakes area beginning cooperative processing center. Learn automation while you earn. We're moving ahead. Want to join us? Two positions ($7,000-$8,000 to begin) open Jan. 1968. Send resume to: Robert Schalau, Director, College Center of the Finger Lakes/Library Center, Gen. Del. Ithaca, N. Y. 14850.

CATALOG LIBRARIAN: To catalog and supervise the processing of all library materials in a busy biomedical library, and to actively participate in an acquisitions/cataloging mechanization project. We prefer someone with a scientific background, a reading knowledge of a foreign language, some acquaintance with medical terminology, the NLM cataloging rules, classification scheme and MeSH. Salary: $7,000-$7,500 depending on training and experience. Apply: Estelle Brodman, Ph.D., Librarian and Professor of Medical History, Washington University School of Medicine Library, 4580 Scott Avenue, St. Louis, Missouri, 63110.

CIRCULATION LIBRARIAN: To supervise a busy circulation desk in an active Medical Center Library. Present staff consists of three full-time and four part-time circulation clerks and one part-time librarian, and two shelvers. Salary: $6,400-$7,200 depending on training and experience. Apply: Estelle Brodman, Ph.D., Librarian and Professor of Medical History, Washington University School of Medicine Library, 4580 Scott Avenue, St. Louis, Missouri 63110.

CLARK ART INSTITUTE, Williamstown, Mass. requires a cataloguer with M.L.S. degree, background in foreign languages and history of art, to assist in the rapid development of its library in anticipation of a program of graduate study in art history. Salary dependent on qualifications and experience. Apply to Michael Rinehart, Librarian.

DREXEL INSTITUTE OF TECHNOLOGY LIBRARIES invites applications for three professional positions: 1) Head of Reference Department, 2) Library Science Divisional Librarian, and 3) Serials Cataloger (assistant to Department Head). Requirements: ALA accredited library degree and appropriate experience. Starting salary: $7,000-$9,600, depending upon position and experience. Liberal academic vacation, retirement, and fringe benefits. Apply: Richard L. Snyder, Director of Libraries, Drexel Institute of Technology, Philadelphia, Pennsylvania 19104.

HEAD, BUSINESS INFORMATION SERVICE—Supervises the business information service of the Regional Information and Communication Exchange—a new service to western Gulf Coast business, commerce, and industry, located at and managed by the Fondren Library, Rice University. Salary is open and competitive. Rice Univ. provides excellent fringe benefits. Information Exchange is special merit program under State Technical Services Act. Requires MLS with experienced knowledge of literature of business and commerce, or, business degree with strong business information background. Apply: R. L. O'Keeffe, Director, R.I.C.E., Fondren Library, Rice University, Houston, Texas 77001. An equal opportunity employer.

ORLANDO PUBLIC LIBRARY has positions immediately available in the Action Center of Florida: Head of Technical Processes—Librarian IV; Librarian I (no or little experience required) and Librarian II in Adult Services with special interest in any of these areas: Business, Science and Technology, Fine Arts, General Information and Reference. Fifth-year library degree required. New improved salary scale in effect. Liberal fringe benefits. Apply: Orlando Public Library, Ten North Rosalind, Orlando, Florida 32801.

FOR SALE

LIBRARIANS: I buy and sell scientific and scholarly back-issues. Please submit your want lists and lists of duplicate materials you wish to sell or exchange. Prompt estimates. Fred. Ludwig, Rte. 4, Box 115, Tucson, Arizona 85704.

NEW, OUT-OF-PRINT TECHNICAL AND SCIENTIFIC BOOKS of many publishers in stock—immediate delivery—price quotations upon request. Technical and Scientific Book Center, 111 Smithfield St., Pittsburgh, Pa. 15222, (412) 281-2228.

Journal of Aeronautical Sciences, volumes 1 to 15, unbound. Make bid. Mrs. G. Forman, c/o Maitan, 167 Sackville Road, Garden City, New York 11530.

THANKS for keeping us so busy that we had no time for selecting and addressing our customary Season's Greetings. Please accept our heartiest wishes in this manner. Albert J. Phiebig, ABAA, Foreign Books & Periodicals, Box 352, White Plains, N. Y. 10602.

LAWRENCE RADIATION LABORATORY

Lawrence Radiation Laboratory with over 5600 employees is located in the San Francisco Bay Area and is engaged in many phases of nuclear research. Due to expanding programs, several new openings now exist.

TECHNICAL INFORMATION DEPARTMENT LIBRARY

Large technical library with 400,000 research reports, 85,000 bound volumes and 1,250 periodical titles. The Library has a staff of 58. Computerized methods are operational in all areas of the Library.

CURRENT OPENINGS:

Literature Scientists Chemistry, Physics, Geology, Engineering, Electronics, Biology or another field of science required. Experience in technical reference, literature searching and bibliography, abstracting, indexing and data evaluation and analysis. Salary range 900-1400.

Positions are also open for persons with a subject background in science. Salary range 700-950.

Reference Librarians Experience in scientific/technical reference and bibliography. Fifth year Library school degree required. Salary range 800-1150.

Technical Processes Librarian Staff position to the Assistant Librarian for Information Processing. Work with data processing techniques. Fifth year Library Science degree and experience in book/document/serial acquisitions and cataloging necessary. Salary range 800-1150.

Benefits include 3 weeks vacation plus 10 additional paid holidays.
Starting salaries are based on pertinent experience.

For further information please contact Dean Wise, Personnel Office. P.O. Box 808 69-127, Livermore, California 94550.

U.S. Citizenship required. An Equal Opportunity Employer.

Now subscribe to The New York Times on negative microfilm from 3M IM/PRESS!

THE NEW YORK TIMES can be delivered to your library on negative microfilm from 3M IM/PRESS—the 3M International Microfilm Press.

Beginning January 1, 1968, you can receive the *TIMES* on 35mm negative rolls mailed every two weeks. Each roll contains two complete weeks of issues. Cost: $525 for a year's subscription.

Why negative microfilm? Because negative rolls offer sharper, cleaner positive copies in seconds from a Microfilm Reader Printer.

Place your 1968 subscription now for *THE NEW YORK TIMES* on microfilm by mailing the coupon.

3M COMPANY IM PRESS INTERNATIONAL MICROFILM PRESS

3M IM/PRESS
Dept. FCS-127
St. Paul, Minn. 55101

☐ Please send us a year's subscription of *The New York Times* on 35mm microfilm beginning Jan. 1, 1968. Our check for $525 is enclosed.

☐ No, we do not wish to order now, but send us more information about business and technical data on microfilm from 3M IM/PRESS.

Name_____

Organization_____

Address_____

City_____ State_____ Zip_____